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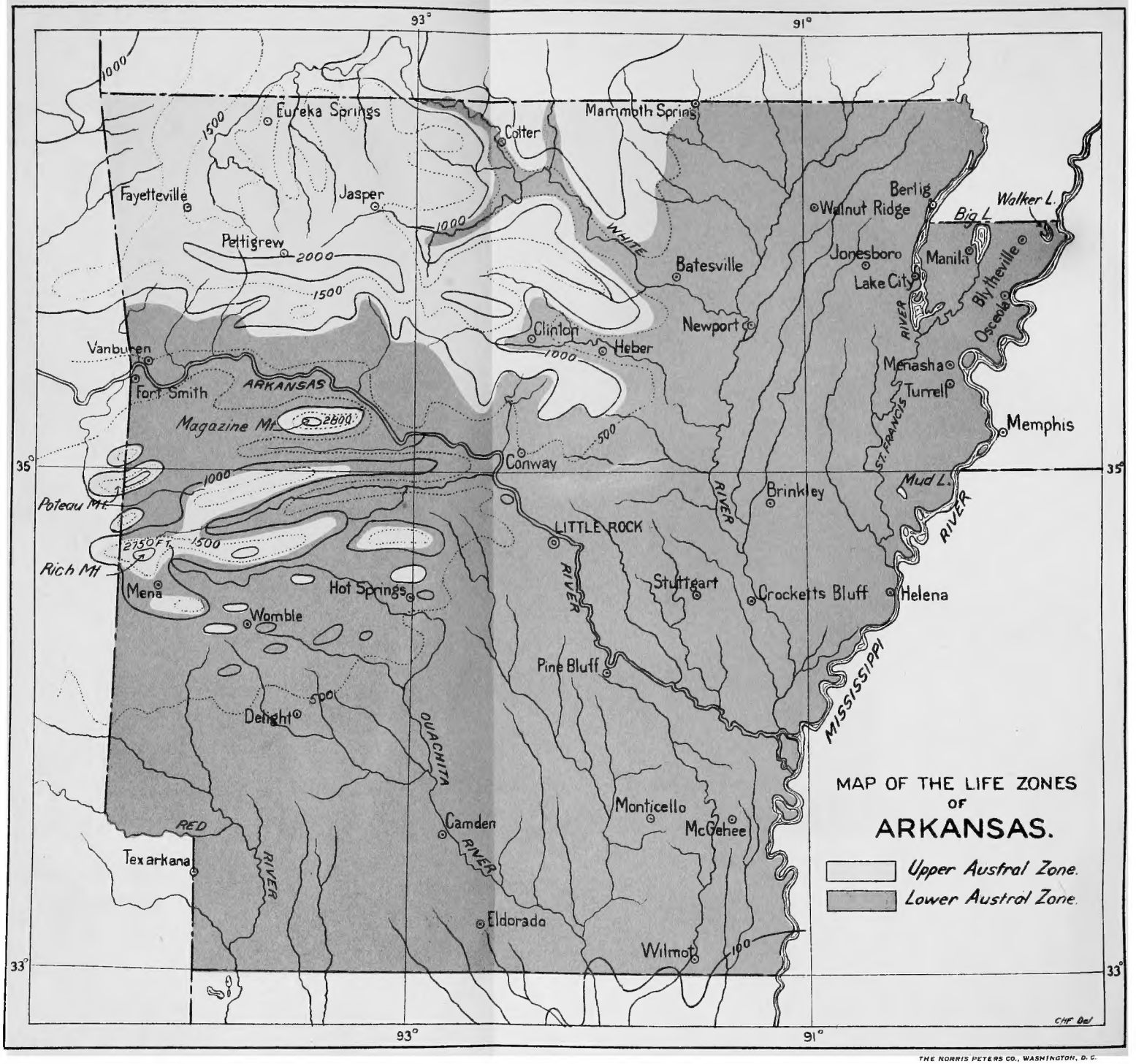

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HENRY W. HENSHAW, *Chief*

BIRDS OF ARKANSAS

BY

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Assistant Biologist, Biological Survey

WASHINGTON
GOVERNMENT PRINTING OFFICE
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LETTER OF TRANSMITTAL

U. S. Department of Agriculture,
Biological Survey,
Washington, D. C., April 13, 1911.

Sir: I have the honor to transmit herewith, for publication as Bulletin 38 of the Biological Survey, a report on the Birds of Arkansas, by Arthur H. Howell. This report fills an important gap in our knowledge of the avifauna of the Mississippi Valley. In mapping the life zones of the region, the lack of definite information as to the number of species within the State of Arkansas, their distribution, and the nature of their occurrence, whether as visitants, migrants, or strays, has been seriously felt, and the present report is designed to supply the needed data. It is the first detailed study to be published of the avifauna of this State, which is remarkable for the variety and abundance of its bird life, and, although by no means complete, the list marks a long step in advance, adding materially to our knowledge of the birds of the region treated.

Respectfully,

Henry W. Henshaw,
Chief, Biological Survey.

Hon. James Wilson,
Secretary of Agriculture.

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BIRDS OF ARKANSAS.

INTRODUCTION.

Arkansas, although long known as a paradise for sportsmen, has been strangely neglected by ornithologists. No detailed study of the avifauna of the State has hitherto been made and very little on its animal life has been published. In mapping the life zones of the Mississippi Valley the Biological Survey has been hampered by the lack of definite information on the distribution of birds in Arkansas, and in order to obtain the data necessary to complete its maps it was found necessary to make a special investigation of the birds of the State and to compile the published records.

Arkansas is remarkable for the abundance and variety of its bird life, and many interesting problems of distribution are presented as a result of its topography and geographical position. Situated in the heart of the Mississippi Valley, it forms part of the great highway of migration for a large majority of the birds of passage which summer in the Northern States and Canada, while it affords a congenial winter resort for myriads of waterfowl and great numbers of the smaller land birds driven south by the severity of more northern climes.

PHYSICAL FEATURES.

The most prominent topographic features of the State are the bottom lands of the Mississippi Basin, in which are included the famous Sunken Lands, the Ozark Plateau of the northwest, and the group of more or less isolated mountain ranges south of the Arkansas River sometimes referred to collectively as the Ouachita Mountains.

THE MISSISSIPPI BOTTOM LANDS.

The so-called Sunken Lands are extensive areas of swamp and overflowed bottom land occupying a large part of Mississippi County and portions of Clay, Greene, Craighead, and Poinsett Counties. The largest of these sunken areas are Big Lake and the broad basin of the St. Francis River, but there are many smaller lakes and sloughs in Mississippi County between Little River and the Mississippi. Many of these lakes, including Big Lake (also Reelfoot Lake, in Tennessee), were formed by the disturbances of the land accompanying the great earthquakes of 1811–1813, usually referred to as the New Madrid earthquake. At that time large forests were prostrated, immense fissures were formed, and profound changes

took place in the bed of the Mississippi River.[1] Evidences of these remarkable disturbances still remain; parts of the bed of Big Lake are covered with a fallen forest of hardwoods of species usually found on high ground, and in Reelfoot and other lakes many dead stubs of old cypresses stand in deep water far from the present shore line. In late summer and fall most of the lakes and rivers in the Sunken Lands shrink greatly in size and some become entirely dry. From November to March this region is populated with countless numbers of waterfowl of many species. In spring and summer it furnishes ideal breeding grounds for wood ducks, cormorants, snakebirds, herons, egrets, and many species of small land birds, but the larger birds, particularly the egrets, have in recent years been greatly reduced in numbers by indiscriminate shooting.

All the counties bordering the Mississippi River are similar in topography to the Sunken Lands, but the proportion of overflowed and swamp land is considerably less. Extensive areas of inundated bottom lands are found also in the valleys of Black River, White River, Cache River, and the Arkansas below Little Rock. The lowlands of the State support a magnificent growth of the finest hardwood timber, much of which is still in its primeval grandeur. Large bodies of cypress and tupelo gum occupy the swamps and wet bottoms along the larger rivers.

In Lonoke, Prairie, and Arkansas Counties considerable tracts of level prairie land, formerly of little value for agriculture, have recently become valuable through the successful introduction of rice farming. Smaller areas of prairie land occur in other parts of the State, chiefly in Sebastian and Logan Counties.

From the bottom lands of the eastern counties the land rises gradually to the westward, becoming hilly through the middle of the State and mountainous in the northwestern and west central parts. In the southwest occur large tracts of pine timber of two species, *Pinus echinata* and *P. tæda*.

THE OZARK REGION.

This region occupies the northwestern part of the State north of the Arkansas Valley from Izard, Stone, and Cleburne Counties westward. It is a rough, mountainous area, varying in altitude from 1,000 to 1,800 feet, with a few peaks reaching somewhat above 2,000 feet. The prevailing forests are of deciduous trees, with considerable tracts of mixed pine and hardwood timber. Small land birds are numerous in this region, and several northern-breeding forms, such as the whippoorwill, yellow warbler, brown thrasher, and robin, find their southern limit here.

[1] For a full account of this earthquake, see N. S. Shaler, Atlantic Monthly, XXIV, pp. 549–559, 1869. A brief account is given also in Bull. 230 (Part I), Office of Experiment Stations, U. S. Dept. Agric., 1911.

FIG. 1.—ST. FRANCIS RIVER SUNKEN LANDS. HOME OF WOOD DUCKS, TREE SWALLOWS, SWIFTS, REDWINGS, MARSH WRENS, ETC.

FIG. 2.—CANEBRAKE IN PRIMITIVE HARDWOOD FOREST, TURRELL, ARK. HOME OF BACHMAN AND SWAINSON WARBLERS.

THE OUACHITA MOUNTAIN REGION.

South of the Arkansas Valley and west of Perry and Garland Counties lies a group of rugged mountain ranges—the highest in the State—known as the Ouachita Mountains. These ranges have a general east and west direction and are steeper and more isolated than the ranges of the Ozarks. Some of the highest peaks are Magazine Mountain (2,800 feet), Fourche Mountain (2,800 feet), Rich Mountain (2,750 feet), Black Fork Mountain (2,650 feet), Petit Jean Mountain (2,600 feet), and Poteau Mountain (2,550 feet).

Both hardwood and pine timber grow on these mountains, the former prevailing in most localities. This region forms the southernmost extension of the Upper Austral Zone in the Mississippi Valley, and several species of birds characteristic of that zone reach their southern limit here.

LIFE ZONES.

LOWER AUSTRAL ZONE.

The greater part of the State is occupied by the Austroriparian division of the Lower Austral Zone, which fills all the lowlands and extends up on the mountain sides to an altitude of approximately 1,200 feet in the southern mountains and 800 to 1,000 feet in the northern mountains. A broad area of this zone occupies the Arkansas Valley, and a narrow tongue extends along the upper White River Valley to or beyond the State line.

In this zone cotton is the prevailing crop, and, except where the boll weevil has become abundant, the most profitable. Rice growing has in recent years been introduced on a large scale in the prairie regions with great success. Corn is raised extensively and wheat and oats in less quantity. Fruits have been little cultivated, but a large variety may be successfully grown.[1] One of the most valuable of the native trees is the pecan, whose cultivation might be profitably extended.

This zone is characterized in Arkansas by the presence of a large number of southern plants, mammals, and birds, among which the following are the most conspicuous:

PLANTS OF THE LOWER AUSTRAL ZONE.

Bald cypress (*Taxodium distichum*).
Loblolly pine (*Pinus tæda*).
Palmetto (*Sabal glabra*).
Large cane (*Arundinaria macrosperma*).
Corkwood (*Leitneria floridana*).
Swamp poplar (*Populus heterophylla*).
Pecan (*Hicoria pecan*).
Water oak (*Quercus nigra*).
Basket oak (*Quercus michauxi*).
Swamp Spanish oak (*Quercus pagodæfolia*).
Overcup oak (*Quercus lyrata*).
Winged elm (*Ulmus alata*).
Planer tree (*Planera aquatica*).
Mississippi hackberry (*Celtis mississippiensis*).
Large-leaf magnolia (*Magnolia macrophylla*).
Water locust (*Gleditsia aquatica*).
Tupelo gum (*Nyssa aquatica*).
Pumpkin ash (*Fraxinus profunda*).

[1] See Life Zones and Crop Zones of the United States, Bull. 10, Biol. Survey, pp. 46–49, 1898.

BREEDING BIRDS OF THE LOWER AUSTRAL ZONE.

Water turkey (*Anhinga anhinga*).
Mississippi kite (*Ictinia misisippiensis*).
Black vulture (*Catharista urubu*).
Little blue heron (*Florida cærulea*).
Florida barred owl (*Strix varia alleni*).
Florida screech owl (*Otus asio floridanus*).
Ivory-billed woodpecker (*Campephilus principalis*).
Southern hairy woodpecker (*Dryobates villosus auduboni*).
Red-cockaded woodpecker (*Dryobates borealis*).
Florida nighthawk (*Chordeiles virginianus chapmani*).
Chuck-will's-widow (*Antrostomus carolinensis*).
Bachman sparrow (*Peucæa æstivalis bachmani*).
Blue grosbeak (*Guiraca cærulea*).
Painted bunting (*Passerina ciris*).
Prothonotary warbler (*Protonotaria citrea*).
Swainson warbler (*Helinaia swainsoni*).
Bachman warbler (*Vermivora bachmani*).
Sycamore warbler (*Dendroica dominica albilora*).
Mockingbird (*Mimus polyglottos*).
Brown-headed nuthatch (*Sitta pusilla*).

MAMMALS OF THE LOWER AUSTRAL ZONE.

Cotton mouse (*Peromyscus gossypinus megacephalus*).
Golden mouse (*Peromyscus nuttalli aureolus*).
Rice rat (*Oryzomys palustris*).
Golden harvest mouse (*Reithrodontomys aurantius*).
Swamp wood rats (*Neotoma floridana rubida* and *N. f. illinoensis*).
Cotton rat (*Sigmodon hispidus*).
Louisiana pocket gopher (*Geomys breviceps*).
Swamp rabbit (*Sylvilagus aquaticus*).
Louisiana skunk (*Mephitis mesomelas*).
Evening bat (*Nycticeius humeralis*).
Carolina shrew (*Blarina brevicauda carolinensis*).

UPPER AUSTRAL ZONE.

The Carolinian division of the Upper Austral Zone covers the greater part of the Ozark region and the slopes of the higher Ouachita Mountains above an altitude of approximately 1,200 feet.

In this zone lumbering and fruit raising are the principal industries. Apples are grown very successfully, as well as corn, oats, and hay. Following are some of the most characteristic species occurring in this zone in Arkansas:

PLANTS OF THE UPPER AUSTRAL ZONE.

Chestnut (*Castanea dentata*).
Red oak (*Quercus rubra*).
Scarlet oak (*Quercus coccinea*).
Shingle oak (*Quercus imbricaria*).
Swamp white oak (*Quercus bicolor*).
Umbrella tree (*Magnolia tripetala*).
Ohio buckeye (*Æsculus glabra*).
Black ash (*Fraxinus nigra*).

BREEDING BIRDS OF THE UPPER AUSTRAL ZONE.

Ruffed grouse (*Bonasa umbellus*).[1]
Black-billed cuckoo (*Coccyzus erythropthalmus*).
Hairy woodpecker (*Dryobates villosus villosus*).
Whippoorwill (*Antrostomus vociferus*).
Phoebe (*Sayornis phoebe*).
Goldfinch (*Astragalinus tristis*).
Towhee (*Pipilo erythrophthalmus*).
Scarlet tanager (*Piranga erythromelas*).
Yellow warbler (*Dendroica æstiva*).
Ovenbird (*Seiurus aurocapillus*).
Brown thrasher (*Toxostoma rufum*).
Robin (*Planesticus migratorius*).

MAMMALS OF THE UPPER AUSTRAL ZONE.

Woodchuck (*Marmota monax*).
Attwater cliff mouse (*Peromyscus boylei attwateri*).
Weasel (*Putorius* sp.).
Spotted skunk (*Spilogale* sp.).

[1] Exterminated.

ECONOMIC VALUE OF BIRDS.

In the early days of the settlement of this country birds were considered of value to man chiefly as a source of food. Modern scientific investigation, however, has demonstrated that most birds are of infinitely more value to the agriculturist through their destruction of noxious insects, destructive mammals, and weed seed.

The great abundance of insects and the widespread injury to crops caused by a host of herbivorous species are well known to every farmer, but the important service rendered by birds in keeping within bounds these destructive swarms is less widely recognized. "The examination of birds' stomachs," says Prof. Beal, "has shown that nearly all of the smaller species, and many of the larger ones, such as the crow, subsist largely upon insects in the summer time, while rearing their young, and, as a general rule, all the small birds feed their nestlings on this food, no matter what the adults may eat."

In fields and gardens the birds most useful in the war against insects are the robin, bluebird, catbird, indigo bird, chipping sparrow, the orioles, blackbirds, meadowlarks, flycatchers, and quail. Swallows, martins, swifts, and nighthawks supplement the work of ground-feeding species by capturing insects in the air as they fly over the fields, and in the orchard and forest a host of keen-eyed foragers, including woodpeckers, nuthatches, wrens, chickadees, warblers, vireos, tanagers, and cuckoos, search out and destroy great numbers of insects destructive to the bark and foliage of fruit and forest trees.

Among the special services rendered by birds in the South may be mentioned the destruction of crawfish by various herons, of mosquitoes by many species, chiefly shorebirds, swifts, swallows, nighthawks, and flycatchers,[1] and of the cotton boll weevil by no fewer than 53 species. The relations of birds to this latter insect are of particular interest in view of the rapid spread of the pest in Arkansas. Investigations in Texas and Louisiana have shown that many birds feed extensively on this weevil, and some species, for instance the orioles, show a special liking for it and have learned how to find it in its hiding places in the cotton "squares."

Besides the orioles, the birds most useful in keeping down the weevil in summer are swallows, nighthawks, flycatchers, and the painted bunting, while in winter splendid service is rendered by meadowlarks, blackbirds, pipits, wrens, and Savannah sparrows, which seek out and destroy the weevils in their hibernating quarters. Cotton growers should see that every species of bird known to feed on the weevil is protected on their lands and should, in addition, strive to increase the numbers of such species as martins and wrens by providing nest boxes for their accommodation.

[1] Cf. McAtee, Auk, XXVIII, pp. 141–142, 1911.

Perhaps the most maligned birds in this country are the hawks and owls. A deep-seated though baseless prejudice against them has persisted to the present day, although it is now nearly 20 years since the Biological Survey demonstrated, as a result of hundreds of stomach examinations, that most of this prejudice is unfounded and that in reality nearly all of our hawks and owls confer a decided benefit on the farmer by destroying field mice, rats, rabbits, other rodents, and insects. The only birds of prey found in Arkansas which are not beneficial are the duck hawk, the sharp-shinned hawk, the Cooper hawk, and the fish hawk.

GAME RESOURCES AND LEGISLATION.

In the abundance of its game birds Arkansas holds an enviable position among the States of the Union, but in the adoption of measures for their conservation she has lagged somewhat behind her sister States. In pioneer days quail, prairie chickens, wild turkeys, passenger pigeons, the mallard and other ducks, and wild geese were so abundant that there seemed to be no danger of their extermination. To-day the pigeons are exterminated, the prairie chickens are on the verge of extinction, and turkeys have become very scarce save in a few specially favorable regions.

The history of the exploitation of these game resources strikingly illustrates the effect which the bird life of a State may have on the development of its legislation and on its attitude toward game protection.

Market hunters were early attracted to the game fields, and with the development of railroads and the introduction of cold storage in the handling of game, came an unexpected drain on the resources of the State. Quail, prairie chickens, pigeons, and ducks were trapped or killed in enormous numbers to supply the markets of St. Louis, Chicago, and other cities, and considerable trade was built up in handling game chiefly for shipment to other States. To regulate this traffic a law was passed in 1875 requiring a $10 market-hunting license of nonresident hunters. The first law fixing seasons for hunting game birds was enacted in 1885, and at the same time protection was extended to the nests and eggs of all wild birds except birds of prey, crows, and blackbirds. In 1889 export of game from the State was prohibited, and in 1897 the market-hunting license was increased to $25. In the same year, through the public-spirited efforts of Mrs. L. M. Stephenson, of Helena, was enacted the first comprehensive law protecting nongame birds and one of the first laws of its kind in any of the Southern States. In 1903, not only was killing of game for sale and the sale itself prohibited, but the privilege of hunting was restricted to residents of the State. No close season for ducks or geese has ever been established, and no restriction has been placed on the numbers of these birds which may be legally killed. It is evident, therefore,

that the abundance of game has caused less attention to be paid to legislation regarding hunting seasons and methods of hunting, while numerous restrictions have been placed on shipment, sale, and market hunting, particularly by nonresidents.

These drastic laws were not permitted to stand unchallenged. The nonresident license law of 1875 was set aside by the circuit courts of Craighead and Poinsett Counties in 1887,[1] and in 1904 the act passed the previous year prohibiting nonresidents from hunting in the State was carried to the supreme court of Arkansas, and this court held the statute unconstitutional in so far as it prevented property owners from hunting on their own land.[2] The nonexport law enacted in 1893 authorized express companies to examine packages suspected of containing game and held them responsible for the transmission of such shipments out of the State. This broad power of examining shipments with the accompanying responsibility was apparently not relished by the carriers, and a few years ago became the basis of a test case carried to the supreme court. The court sustained the law and held the express companies liable for game shipments intrusted to their care.[3]

Restrictions on the shipment of game and on hunting by nonresidents have aroused most opposition in the northeast section of the State, particularly in the Sunken Lands, where enormous numbers of waterfowl attract not only market hunters but sportsmen from other States. Several wealthy clubs have acquired property at favorable points in the region and have erected expensive club houses on their grounds. In the attempt to reap the greatest amount of benefit from the enormous numbers of birds which annually visit this section, there has been a constant effort on the part of club members and market hunters to secure legislation favorable to their interests. This has resulted in bringing about conditions far from satisfactory, and has left the game without that measure of protection which is considered essential in other States.

SOURCES OF INFORMATION.

Audubon was probably the first naturalist to visit the State. He passed through Arkansas at various times between the years 1811 and 1819, but no account of his expeditions has been preserved, and the published results consist only of scattered records in his "Birds of America" and the description there of a new species of flycatcher (*Empidonax trailli*), which he procured on the prairies of the Arkansas River.

In 1819 Thomas Nuttall made a journey down the Mississippi to the mouth of the Arkansas and up the Arkansas to Fort Smith, but

[1] American Field, XXXVII, p. 49. 1892; XXXVIII, p. 3, 1892.
[2] State *v.* Mallory, 83 S. W. 955.
[3] Wells Fargo Express Co. *v.* State, 96 S. W. 189.

he was primarily a botanist and his account of the trip, while abounding in interesting descriptions and valuable plant notes, contains only casual allusions to the birds seen along the route.

In 1820 Maj. Long's exploring party, on its return from the Rocky Mountains, crossed the State from Fort Smith to Little Rock and thence overland to Cape Girardeau, Mo., but with one or two exceptions the published account of the expedition contains no reference to Arkansas birds.

Several of the later Government exploring expeditions to the Western States made Fort Smith their point of departure, but on account of the location of that place so near the western boundary of the State practically no observations were made until the exploring parties had crossed into what is now Oklahoma.

The ornithology of Arkansas remained practically unknown until the later years of the last century. Frequent references to the birds of the State, chiefly game birds, are found in the pages of Forest and Stream and American Field, and occasional short articles have appeared in the Auk and other natural history magazines, but only three local lists treating of Arkansas birds have been published. The first of these is a brief account by H. S. Reynolds of 29 species observed in White County in the winter of 1876–77.[1] In the summer of 1881 O. P. Hay made a few observations near Hopefield, on the Mississippi River, and in a list, published the following year, recorded 29 species from the State.[2] In 1902 N. Hollister published a list of 51 species of winter birds, which he observed in 1899 and 1900, chiefly on the Grand Prairie of Arkansas County.[3] This paper supplied four additions to the State list and many valuable distribution notes.

When Prof. W. W. Cooke began the study of bird migration in the Mississippi Valley, in 1882, only a single observer, Prof. F. L. Harvey, of Fayetteville, was found in Arkansas to contribute notes. In 1884 one more observer, W. A. Monroe, of Newport, was added to the force, and in 1889 and 1890 C. E. Pleas, of Clinton, furnished valuable notes on the birds of the mountain region near that place. Some of the data furnished by these observers were published in Prof. Cooke's Report on Bird Migration in the Mississippi Valley.[4] As early as 1886 Mrs. L. M. Stephenson, of Helena, began to record observations on the birds of that locality, and from 1894 to the present date she has furnished each year to the Biological Survey detailed notes on migration. The data supplied by this series of observations have proved of the greatest value in the preparation of the present report, furnishing many new records and the most important migration dates at present available.

[1] Amer. Nat., XI, pp. 307–308, 1877.
[2] Bull. Nuttall Orn. Club, VII, pp. 89–94, 1882.
[3] Wilson Bull., IX, pp. 10–15, 1902.
[4] Bull. 2, Div. Econ. Ornith. [Biol. Surv.], U. S. Dept. Agric., 1888.

In the spring of 1910 Mr. Walter G. Savage moved to Delight, Pike County, and at once began to make observations on the birds of that region. His notes, based in many cases on specimens which he collected, have added much to our knowledge of the birds of the southwestern part of the State. In the winter of 1910–11 Mr. G. Dallas Hanna spent about six weeks at Van Buren collecting birds, chiefly the smaller land birds. His specimens have been examined and identified by the Biological Survey, and these records, together with his notes on 65 species, have added 11 forms to the State list and many new facts on the distribution of winter birds.

Most of the information on breeding ranges contained in the present report was gained by the writer during a collecting trip extending from April 28 to July 7, 1910. The principal localities at which observations were made are as follows: Mammoth Spring, Cotter, Lake City, Walker Lake (Mississippi County), Turrell (Big Creek Station), Stuttgart, McGehee, Wilmot, Camden, Delight, Womble, Mena, Rich Mountain (Polk County), Pettigrew, and Conway.

Several other members of the Biological Survey staff have visited the State for short periods. Edward A. Preble collected at Fort Smith and Fayetteville from September 15 to October 1, 1892. B. H. Dutcher worked at Hardy, Batesville, Beebe, and Benton in April, 1894. C. E. Brewster visited Big Lake for a few days in November, 1909, and December, 1910, and Wappanocka Lake (Turrell) on December 20, 1910. W. L. McAtee collected from November 12 to 24, 1910, at Mud Lake (St. Francis County), Wappanocka Lake, and Menasha Lake and made observations at Big Lake from June 20 to 23, 1911.

NUMBER OF SPECIES.

In the list which follows 255 species and subspecies are accredited to the State. No bird is admitted to the list unless there is an actual record of its occurrence, based on a specimen, a published record, or a report by a competent observer.

On account of the very limited number of observers many species have escaped detection which, by reason of their known range in adjacent regions, must certainly occur in the State. These species, 35 in number, are included in a hypothetical list, distinguished from the species actually recorded by being printed in smaller type.

Dividing the list of birds actually and probably occurring in the State into several categories, we find that 67 species or subspecies may be considered as permanent residents, either nonmigratory birds breeding within its limits or migratory species that occur in both summer and winter; 75 are summer resident breeding species; 60 are winter residents; 69 are transients—that is, migrating species occurring in either spring or fall; and 19 occur irregularly as

accidental visitors. Many species listed as summer residents and winter residents occur also more abundantly as transients. More thorough field investigations will doubtless increase the number of birds known to occur in the State to about 300 forms.

LIST OF SPECIES.

Pied-billed Grebe. *Podilymbus podiceps.*

This little grebe, known locally as "didapper" and "hell-diver," may be found during the spring and fall migrations on almost any lake or slough in the State. In the nesting season, however, it is rare, and the only record at hand is that of a bird which I saw at Wilmot on June 29. The last migrants at Clinton were reported November 5 (Pleas, 1890), but a few were seen between November 15 and 21 (McAtee, 1910) at Mud Lake, St. Francis County; Turrell, Crittenden County; and Menasha Lake, Mississippi County. It is possible that small numbers may spend the winter in the Sunken Lands.

The demand for grebes' feathers for millinery has worked havoc among the larger species, and doubtless this little bird has suffered to some extent with the rest; but its small size, retiring habits, and wonderful diving powers preserve it in a measure from destruction, and under present conditions it is likely to hold its own. It is a harmless and interesting bird and should be everywhere protected.

Loon. *Gavia immer.*

The loon breeds from the Arctic Ocean south to Iowa and Illinois and winters from southern Canada to the Gulf coast. It probably occurs in Arkansas as an uncommon spring and fall migrant and has once been reported as a winter resident—at Clinton, in 1890.

Herring Gull. *Larus argentatus.*

The herring gull, the largest of its family found in the Mississippi Valley, is widely distributed in both North America and Europe, chiefly along the seacoasts and on large lakes and rivers. It has been reported in winter near Clinton and probably occurs regularly in migration. Mr. S. C. Dowell, of Walnut Ridge, has a specimen which was killed in the vicinity of that town.

Ring-billed Gull. *Larus delawarensis.*

The ringbill breeds in Canada and the northern United States and winters from the Great Lakes south to Mexico and Cuba. The only definite record from Arkansas is that of a bird in the possession of Mr. S. C. Dowell, which was killed near Walnut Ridge, but the species is doubtless a fairly common migrant in both spring and fall.

[**Franklin Gull.** *Larus franklini.*

This small black-headed gull is a common summer resident in the upper Mississippi Valley from Iowa north to southern Canada, and winters from the Gulf coast southward to South America. It undoubtedly occurs in Arkansas in migration.]

Bonaparte Gull. *Larus philadelphia.*

This species, one of the smallest of the gulls, is probably a regular, though uncommon, transient visitant. No recent records of its occurrence are at hand, but Audubon mentions a specimen which he shot November 12, 1820, on the Mississippi River, a few miles below the mouth of the Arkansas.[1]

[**Forster Tern.** *Sterna forsteri.*

This tern is widely distributed in the Mississippi Valley, breeding on the coasts of Louisiana and Texas and also from Nebraska and Illinois northward. It is recorded as a regular transient visitant in Missouri, and probably occurs in Arkansas.]

[**Least Tern.** *Sterna antillarum.*

The least tern is known as a summer resident in the Mississippi Valley, formerly common, now very rare as a result of persecution by plumage hunters. It formerly bred north to Iowa and Nebraska and has been observed in summer in recent years at Tallulah, La.[2] Oberholser found it fairly common in June, 1902, near Texarkana, Tex., within a few miles of the Arkansas line. In former years it undoubtedly occurred in Arkansas and it may still be found in the State.]

[**Black Tern.** *Hydrochelidon nigra surinamensis.*

The black tern breeds from Missouri and Ohio northward to northern Canada and winters south of the United States. It undoubtedly occurs regularly in Arkansas as a spring and fall migrant.]

Water Turkey. *Anhinga anhinga.*

The water turkey or "snake bird" is fairly common locally in the swamps of eastern Arkansas. It breeds at Helena, Wilmot, and Walker Lake and has been recorded from Osceola and Newport—at the last-named place in winter.

The birds are frequently hunted for food or sport, and as they are easily approached, their numbers have been much reduced. If not protected by the enforcement of the existing game law, the species is likely to be exterminated. A bird so harmless and interesting should be preserved for future generations.

Double-crested Cormorant. *Phalacrocorax auritus auritus.*

Cormorants were formerly abundant in the rivers and swamps of eastern Arkansas, but as a result of the drainage and settlement of the land they are now found only in the wilder and more remote sections, where they are comparatively free from persecution. A large colony, probably the only large one now remaining in the State,

[1] Orn. Biog., IV, 212, 1838. [2] Beyer, Allison, and Kopman, Auk, XXIV, p. 315, 1907.

breeds in a rookery at Walker Lake, Mississippi County, in company with great blue herons and water turkeys. When I visited this rookery the first week in May, 1910, I found the cormorants sitting on their nests in the tops of the tall cypresses growing in the lake. The nests, of which there were between 100 and 200, were placed in crotches either close to the trunks or some distance out on the limbs and were compactly built of green cypress twigs with a few strips of bark as a lining. Most of the nests examined contained three or four bluish eggs, but in one were four little naked coal-black cormorants a few days old. The number of nests in a single tree varied from 1 to 6—usually 3 or 4—and in many instances the cormorants shared the tree with several great blue herons. Specimens taken in this colony are referable to the northern form, and this is probably the southern limit of its breeding range.

Cormorants feed chiefly upon fish and often fly long distances to obtain their favorite food. With the approach of winter many of the birds seek more southern waters, but some remain till cold weather. Migrants were observed at Helena between September 15 and October 14, 1894 (Stephenson), and quite a number on Menasha Lake November 22–24 (McAtee, 1910). In 1882 they were reported as very abundant along White River near Crocketts Bluff.[1] Many persons call this species "water turkey" as well as the species properly so named. Cormorants may be easily recognized by their hooked bill and their uniform glossy black color.

White Pelican. *Pelecanus erythrorhynchos.*

White pelicans were formerly very abundant in migration along the larger rivers and they still visit the State in some numbers. In 1895 and 1896 Mrs. L. M. Stephenson reported flocks of 100 to 300 at Helena between September 3 and November 9. Mr. W. D. Brooks, of Turrell, states that numbers of them come to the lake at that place each year in August, and one was killed there about November 15, 1910. Occasional flocks are seen on Walker Lake and on Big Lake, and the birds doubtless occur regularly in small numbers in all parts of the Sunken Lands.

Merganser. *Mergus americanus.*

This duck, known commonly as "shelldrake," is probably an uncommon winter resident. Audubon speaks of observing it on the Arkansas River,[2] and Mrs. Stephenson reports it on the authority of local hunters at Helena, but definite records of its recent occurrence are lacking.

[Red-breasted Merganser. *Mergus serrator.*

The red-breasted merganser is a common winter resident in Louisiana and a rare winter resident in Missouri. It should be found occasionally in Arkansas.]

[1] Forest and Stream, XVIII, p. 27, 1882.

[2] Birds of Amer., VI, p. 387, 1843.

Hooded Merganser. *Lophodytes cucullatus.*

A fairly abundant summer resident throughout the Mississippi Valley, the hooded shelldrake or "sawbill" breeds in favorable localities in Arkansas, nesting in hollow trees, after the manner of the wood duck. Strong-flying young were seen at Big Lake June 22, 1911 (McAtee). It is common in migration on lakes and sloughs, and is reported to occur plentifully on Big Lake from October to March. McAtee found it common at Mud Lake November 14 and at Turrell November 17–19, 1910. The food of this species is chiefly crawfish, frogs, small fishes, and insects.

Mallard. *Anas platyrhyncha.*

The mallard is the most abundant duck and the most important game bird in the State. It has been the chief factor in the development of extensive market hunting and shipping interests and in the growth of several large and wealthy sportsmen's clubs.

The first fall migrants arrive about the middle of October, but the main flight occurs in November, and the species is found in numbers until the middle of April, although the majority go north in March. The shallow lakes and overflowed bottom lands of the eastern part of the State are particularly attractive to this bird, and on these waters it reaches its greatest abundance. Many thousands are killed each season by market hunters and thousands more by local gunners and members of sportsmen's clubs. Widmann states that in the winter of 1893–94 150,000 ducks, four-fifths of which were mallards, were sent to market from the Big Lake region.[1] In spite of the tremendous annual slaughter the species is still found in great abundance, but according to experienced gunners is decreasing yearly in numbers. It was recorded as abundant on the Grand Prairie around Stuttgart in November and January (Hollister, 1899 and 1900) and at Mud Lake, Menasha Lake, and Wappanocka Lake in November (McAtee, 1910). It winters in small numbers in the vicinity of Fayetteville (Harvey), and has been reported from Clinton in February (Pleas) and from Van Buren in December (Hanna). The food of the mallard consists largely of the seeds and stems of water plants (such as duckweed, pondweed, and hornwort), together with acorns, beechnuts, and various grains. The birds are fond of both corn and rice, and when living near grainfields are said to feed in them regularly. They consume more or less animal food, such as snails, aquatic insects, an occasional meadow mouse or frog, and will not reject even dead fish or other offal. In the timbered sloughs of eastern Arkansas the mallard feeds extensively on acorns, but on lakes in the Sunken Lands lives to a great extent on seeds and water plants.

[1] Auk, XII, p. 354, 1895.

Black Duck. *Anas rubripes.*

Although common along the Atlantic coast, the black duck is comparatively rare in the Mississippi Valley. A specimen taken in Mississippi County November 5, 1887, has been recorded by Mr. William Brewster.[1] McAtee saw a few at Mud Lake November 13 and 14, many at Menasha Lake November 21 and 22, and one at Turrell November 19 (1910), and took specimens at each of these localities.

Gadwall. *Chaulelasmus streperus.*

The gadwall, known frequently as "gray duck" or "red wing," is a common winter visitant in the State. Mr. O. Widmann speaks of it as plentiful on Big Lake[2] and Mrs. Stephenson reports it at Helena. McAtee found it common at Mud Lake November 13–15 and abundant at Turrell November 17–19 (1910). It was common at Menasha Lake December 10, 1909, when 50 were killed by the club members. According to Goss, this bird feeds upon insects, snails, tadpoles, crawfish, bulbous roots, tender blades of grass, and cereals.[3] On Big Lake it is said to feed in open water in company with coots (*Fulica americana*), and its food there consists largely of seeds of aquatic plants.

Baldpate. *Mareca americana.*

The baldpate or American widgeon is a common migrant in the Mississippi Valley, breeding from Kansas and Wisconsin northward and wintering mainly from the Gulf States southward. It doubtless occurs regularly in Arkansas in fall and spring, but there are few available records. Hollister states that he saw very few in the bags of market hunters at Stuttgart, and McAtee secured only two specimens in November—one at Mud Lake, November 14, and one at Turrell, November 19. C. E. Brewster saw a few on Big Lake, December 17, 1910, but it is not usually common there. The food of the baldpate is said to consist of roots and seeds of aquatic plants, water insects, beechnuts, etc. It is accused of robbing the canvasback and other diving ducks of the food which these birds bring to the surface.

Green-winged Teal. *Nettion carolinense.*

The green-winged teal is an abundant migrant in both spring and fall, and small numbers spend the winter in the State. Southbound migrants are first seen in early October, and by the middle of November the species is abundant on the lakes and sloughs of the Sunken Lands. A few remain on Big Lake all winter, but most of them leave with the coming of severe weather. The first small flight was noted

[1] Auk, XIX, p. 188, 1902.
[2] Auk, XII, p. 355, 1895.
[3] Birds of Kansas, p. 59, 1891.

at Crocketts Bluff on October 22 (1882),[1] and Savage saw a flock of seven at Delight on November 9 (1910). McAtee found the species abundant by the middle of November at Mud Lake and Wappanocka Lake, but Hollister states that few were seen at Stuttgart in January. In spring the first arrivals have been noted at Fayetteville March 20, but they doubtless reach the lowlands of the State in February. The food of this teal consists principally of the seeds of aquatic plants (including various grasses, sedges, wild rice, and pondweed), small acorns, fallen grapes or berries, aquatic insects, and small snails.

Blue-winged Teal. *Querquedula discors.*

The bluewing is a common transient visitant, but as it migrates south before the fall hunting season is fairly under way comparatively few are killed by market hunters or by sportsmen. The earliest migrants reach Arkansas in late August or early September, becoming common the last of September or first of October, and by November nearly all have passed southward to their winter home. In mild winters a few may remain in the State, as in the winter of 1893–94, when they were reported in small numbers from Big Lake.[2] A writer in the American Field speaks of their occurrence in December on Rose Lake, Crawford County.[3] In spring this is one of the latest ducks to migrate, the majority passing north between March 15 and April 15. Many linger even later than that, and I noted a small flock on the St. Francis River, north of Bertig, April 29. This duck feeds upon the seeds, roots, and tender blades of water plants, and is said to be especially fond of wild rice. It eats also snails and insects.

Shoveler. *Spatula clypeata.*

The shoveler, or spoonbill, as it is usually called, is a fairly common migrant and an uncommon winter resident. McAtee took a few specimens at Mud Lake, Wappanocka Lake, and Menasha Lake between November 14 and 22, and it is reported in December from the latter place and from Rose Lake, Crawford County.[4] Two were killed on Big Lake, December 17 (1910), and a few are found there throughout the winter (Eason). Its principal breeding range is in the prairie region from Iowa and South Dakota northward to the Saskatchewan, but since it has once been found breeding in east Texas it may occasionally nest in Arkansas. The food of this duck includes seeds of various water plants, snails, earthworms, and aquatic insects.

[1] "Byrne," Forest and Stream, XIX, p. 286, 1882.
[2] Widmann, Auk, XII, p. 354, 1895.
[3] "Old Timer," Am. Field, LII, p. 181, 1899.
[4] Amer. Field, LII, p. 181, 1899.

Pintail. *Dafila acuta.*

The pintail, or "sprig," is an abundant migrant, especially in spring, and an uncommon winter resident. First arrivals in fall have been noted at Osceola October 5, and by November 11 the birds were common on Mud Lake. At Wappanocka Lake McAtee found them abundant November 17–19, and at Stuttgart Hollister recorded a few seen in January. Mr. W. B. Eason says of the pintail on Big Lake: "Not many stop here on the southward flight, but on the return in February there are thousands of them, and they furnish good shooting for several weeks." The first northbound migrants were observed at Fayetteville January 27 and the last on March 20. This species feeds on the seeds and stems of rushes, duckweed, and other aquatic plants, snails, and insects. It is said to be fond of beechnuts and acorns.

Wood Duck. *Aix sponsa.*

This handsome duck is one of the commonest of its family in both summer and winter. Formerly abundant in many parts of the State, its numbers have been greatly reduced by constant persecution, and it is now rare or absent in many localities. In the heavy swamps of the eastern counties it is still common, but will not long remain so unless protection is afforded it by both law and public sentiment. At present it may be killed at any time and gunners often begin shooting the young birds in June, when they are not more than two-thirds grown. In the Sunken Lands it finds ideal nesting haunts, and there it breeds abundantly, nesting in hollow trees over water. It nests also, but less frequently, in swampy bottoms throughout the State, having been observed at Clinton, Fayetteville, Newport, Turrell, Big Lake, Helena, Wilmot, and Alma. In winter it has been reported from Alma, Fayetteville, and Stuttgart (3 killed February 8); but, as at other seasons, is probably most numerous in the big swamps of the northeastern counties. Hollister reported it very common on Bayou Meto, Arkansas County, in November, and McAtee found it in small numbers at Turrell November 17–19. The food of the wood duck consists of the seeds and leaves of aquatic plants (such as the water lily, pondweed, and wild rice), acorns, beechnuts, chestnuts, wild fruits, and insects.

Redhead. *Marila americana.*

The redhead occurs in favorable localities as a regular and not uncommon migrant and winter resident, preferring usually the deeper lakes and streams for its feeding grounds. It has been reported as a migrant at Clinton and Helena and was observed in numbers by McAtee at Menasha Lake November 22–24. A writer in the American Field says it is occasional in winter (December) on Rose Lake, Crawford County,[1] and Mr. W. B. Eason reports a few

[1] "Old Timer," Amer. Field, LII, p. 181, 1899.

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occurring on Big Lake all winter. Hanna saw a flock of 30 at Van Buren November 28. Audubon states that the food of this duck consists of small fishes, tadpoles, snails, acorns, beechnuts, and blades of grass. To this list should be added insects and the seeds and stems of water plants.

Canvasback. *Marila valisineria.*

The famous canvasback occurs as a moderately common migrant and a few remain through the winter. It breeds from Minnesota and Nebraska northward, and on its southward migration reaches Arkansas usually in November. McAtee found it numerous on Wappanocka Lake November 17–19, 1910, but it is not usually common there. One specimen was taken also on Menasha Lake November 23, and the species has been reported from Big Lake (a few all winter), Osceola, and Helena. The canvasback feeds mainly on the seeds, tubers, and stems of various water plants (such as pondweed, eel grass, arrowhead, and rushes), and consumes also some mollusks, crustaceans, and insects.

Lesser Scaup Duck. *Marila affinis.*

The scaup, or "blue-bill," as it is frequently called, occurs regularly in moderate numbers as a winter resident. On Menasha Lake one was taken December 1 (1909), and seven on November 22 and 23 (1910). It is reported plentiful at Big Lake about the middle of November (Eason), and one was killed there December 17 (1910). Kumlien reports "a few seen in Arkansas near Ft. Gibson, Ind. Ter.,"[1] probably not far from Fort Smith.

Ring-necked Duck. *Marila collaris.*

The ring-neck or "black jack" is a common migrant and winter resident. It occurs abundantly in autumn on the waters of the Sunken Lands and less numerously on other lakes and sloughs. McAtee found it common at Mud Lake November 13–15 and at Turrell November 17–19. It was abundant at Menasha Lake between November 21 and December 10, 13 birds having been killed there on the latter date. On Big Lake in November and December it is often the most abundant duck, and gunners there frequently kill as many as 50 birds in a few hours. A few remain all winter (Eason). The food of the ring-neck consists mainly of the seeds and stems of pondweed, hornwort, and other aquatic plants, with many nymphs and larvæ of water insects.

Golden-eye. *Clangula clangula americana.*

This hardy northern duck is of rare occurrence south of Missouri and Illinois, but is occasionally found in Arkansas in winter. C. E. Brewster observed several on Big Lake December 17, 1910, and Mr. W. B. Eason, custodian of the Big Lake Club, reports a good many there in January, 1911. There are no other records from the State.

[1] Field and Forest, II, p. 130, 1877.

Bufflehead. *Charitonetta albeola.*

The bufflehead or "butter-ball," one of the smallest ducks, is a fairly common migrant in the Mississippi Valley and, although reported but a few times from Arkansas, doubtless occurs there quite regularly. At Helena, Mrs. Stephenson reports it on the authority of a local hunter. Dr. D. A. Richardson noted it as a rare migrant at Osceola in 1886, and it is reported by local hunters at Paragould as fairly plentiful in Mississippi County. C. E. Brewster killed one and saw a number that had been killed on Big Lake in November, 1909, but they are said to be rare there.

Ruddy Duck. *Erismatura jamaicensis.*

The little ruddy duck, sometimes called "bristle-tail" or "booby," occurs in the Mississippi Valley as a common migrant and less frequently as a winter resident from Illinois southward. The only records from Arkansas are furnished by McAtee, who found it common at Turrell November 17, and saw several on Menasha Lake November 21, 1910.

Snow Goose. *Chen hyperboreus hyperboreus.*

Greater Snow Goose. *Chen hyperboreus nivalis.*

Snow geese, undoubtedly representing both forms of the species, occur regularly in migration in the Mississippi Valley, where they are almost universally known as "brant" or "white brant." They were seen at Helena, October 19–November 21, 1895, by Mrs. Stephenson, at Fayetteville, March 20–31, 1883, by Prof. Harvey, and at Delight, March 28, 1911, by Mr. Savage, these being the only definite records from the State.

[**Blue Goose.** *Chen cærulescens.*

The range of this goose is imperfectly known, but since it occurs as a common migrant in Illinois and as an abundant winter resident on the coast of Louisiana, it will undoubtedly be found in Arkansas during migrations.]

White-fronted Goose. *Anser albifrons gambeli.*

The "speckle-belly" or "speckled brant," as this goose is often called, is a fairly common bird in the Mississippi Valley and probably occurs regularly in Arkansas in migration. The only record from the State is by Audubon, who states that "numbers [were] seen high on the Arkansas River." [1]

Canada Goose. *Branta canadensis canadensis.*

The wild goose is a common migrant and winter resident in the State and a few pairs remain to breed in the most secluded parts of the Sunken Lands. At Walker Lake on May 4, 1910, I saw a pair and was told that several pairs breed there each season. This is

[1] Birds of Amer., VI, p. 209, 1843.

probably the extreme southern limit of this bird's breeding range in the Mississippi Valley, its principal summer home being in the interior of Canada. Migrating geese begin to arrive by the last of September (earliest seen at Helena, September 26) and are present in varying numbers until late March or early April.

Audubon found wild geese abundant on the Arkansas River in winter[1] and Hollister records their occurrence on the Grand Prairie about Stuttgart at the same season. McAtee found them abundant at Menasha Lake November 22–24, and C. E. Brewster saw several bunches, numbering about 75 in all, at Turrell December 20, 1910. The species has been reported in migration from Osceola, Little River, Monticello, and Fayetteville.

The food of the wild goose includes a variety of wild plants, such as grass wrack (*Zostera*), wild rice, arrowhead, sedges, and marsh grasses. Sprouting grain, including wheat, corn, barley, and oats, is a favorite food and the birds sometimes cause much damage by destroying the roots of grain. They frequently eat wild berries, as well as insects, crustaceans, small clams, and snails.

Hutchins Goose. *Branta canadensis hutchinsi.*

This small form of the wild goose is probably a fairly common migrant and winter resident. The only record at hand is that by Hollister, who saw two birds at Stuttgart in 1899.[2]

A goose weighing only about 3 pounds, shot at Mud Lake, St. Francis County, early in November, 1910, was probably of this subspecies.

[**Whistling Swan.** *Olor columbianus.*

This species is a rare migrant in the Mississippi Valley, and is found locally in winter from Illinois to Louisiana and Texas. It doubtless occurs occasionally in Arkansas.]

Trumpeter Swan. *Olor buccinator.*

The trumpeter swan is the species usually found in the Mississippi Valley in migration. Audubon reported it as visiting the Arkansas River annually, and he shot a specimen on a lake near the mouth of that river.[3] Large flocks of swans, probably of this species, were seen flying north at Helena, April 29, 1890, and April 20, 1891 (Stephenson). The bird is occasionally seen at Mud Lake, but in recent years has become very rare in the State.

Wood Ibis. *Mycteria americana.*

This large, storklike bird, often called "gourdhead," is a regular summer visitant in many parts of the State. It apparently does not nest in Arkansas, but wanders northward in July or August from its breeding grounds in the Gulf States. On July 7, 1910, I saw six in

[1] Birds of Amer., VI, p. 178, 1843.
[2] Wilson Bull., IX, p. 12, 1902.
[3] Orn. Biog., IV, pp. 537–538, 1838.

an open, swampy tract of woodland near Camden. When approached they rose leisurely and circled slowly over the tops of the trees for several minutes, but at the discharge of a gun sailed away into the thicker timber.

This species is reported to appear regularly in August at Turrell, and Mrs. Stephenson states that great numbers are seen in the fall at Helena, "drilling high in air." Mr. S. C. Dowell, of Walnut Ridge, has a mounted specimen which was killed in that vicinity. Oberholser, in 1902, reported the species as occurring abundantly in July and August along Red River north of Texarkana.

Bittern. *Botaurus lentiginosus.*

The bittern, "stake-driver," or "thunder-pump," is a common migrant in Arkansas and may occasionally breed there, though its normal summer home is from Missouri northward. The first spring migrant was noted at Fayetteville March 31 (Harvey, 1883) and at Delight April 11 (Savage, 1911). The species was common on the St. Francis River, north of Bertig, between April 25 and 30 (1909). It was reported as a summer resident at Newport in 1895. In autumn it has been recorded as arriving at Delight September 15 and 16 (Savage) and at Crocketts Bluff October 22.[1] Bitterns frequent marshes and the borders of streams, where their curious pumping notes may be heard and where they are often flushed and wantonly killed by duck hunters. Their food consists largely of frogs, snakes, lizards, crawfish, meadow mice, and fish.

[**Least Bittern.** *Ixobrychus exilis.*

This diminutive member of the heron family is a locally abundant summer resident throughout the Mississippi Valley, and will doubtless be found as a breeder in the swamps of Arkansas.]

Great Blue Heron. *Ardea herodias.*

This fine bird, often called "blue crane," is a fairly common summer resident and a few remain during the winter. It has been observed in the breeding season at Clinton, Walker Lake, Turrell, and Wilmot, and in fall and winter at Fayetteville, Fort Smith, Mud Lake, and Menasha Lake. It is most common in the bottomlands of the eastern part of the State, and at Walker Lake there is a large rookery containing several hundred nesting pairs. I visited this colony on May 4 and 5, 1910, and found the birds in the midst of their breeding season. The nests were concentrated in an area of a few acres in the middle of a big cypress swamp in which the water was at that time from 3 to 5 feet deep. They were placed near the tops of the larger trees, usually at a point where several limbs forked, and single trees contained from 1 to 10 nests. A few nests at this date contained eggs, but the great majority were occupied by young

[1] Forest and Stream, XIX, p. 286, 1882.

FIG. 1.—CYPRESS SWAMP, WALKER LAKE, ARKANSAS. SITE OF A LARGE HERON ROOKERY.

FIG. 2.—GREAT BLUE HERONS AND NESTS, WALKER LAKE, ARKANSAS.

a few days old. The calls of the young sounded like the chattering of a flock of blackbirds.

The food of this heron consists chiefly of fish, with the addition of frogs, lizards, snakes, meadow mice, young rats, crustaceans, small birds, especially the smaller marsh-inhabiting species, and insects, particularly grasshoppers and aquatic beetles.

American Egret. *Herodias egretta.*

The large white egret, formerly an abundant breeding species in the swamps of Arkansas and other States in the Mississippi Valley, has been almost exterminated through the milliners' demand for its plumes. Twenty years ago a large colony of these birds nested in the "Peck Cypress" near Armorel. In May, 1910, in the Walker Lake rookery in the same county, I saw only three or four pairs, and in June of the same year Mr. B. Widmann found 3 nests there and saw only 3 adult birds. One of the nests contained 1 egg, another 3 nearly fledged young, and on the third an adult bird was sitting. Extensive shooting of this species for its plumes has ceased because there are not enough birds left to make the business profitable. But to assure the safety of the remnant will necessitate the strict enforcement of the law protecting all nongame birds.

Snowy Egret. *Egretta candidissima.*

Like the other white herons, this exquisite little egret, although once abundant, has been practically exterminated by persistent hunting for its plumes. It formerly nested in the Mississippi Valley States as far north as southern Illinois, but in recent years has been driven out from all but the more inaccessible parts of Louisiana. In 1886 it was reported as arriving at Osceola April 3, and in 1889 a few were seen at Clinton July 4. In June and July, 1902, Oberholser saw a few along Red River north of Texarkana.

[**Louisiana Heron.** *Hydranassa tricolor ruficollis.*

This is a southern species, breeding along the Gulf coast and north to North Carolina. It has been recorded from Indiana and Missouri, but there is no definite record of its occurrence in Arkansas. Oberholser reported the species common along Red River north of Texarkana (Tex.) in June and July, 1902.]

Little Blue Heron. *Florida cærulea.*

Since this species is not a plume producer, it has held its own better than the egrets and is still common in the swamps of southeastern Arkansas. It formerly bred as far north as Missouri and southern Indiana, but now probably does not occur in the nesting season north of southern Arkansas. At Wilmot the last week in June it was very common and doubtless breeds in the big swamps in that vicinity. It formerly nested in a large cypress swamp near Cypress, Ashley County, but the colony deserted that location some

years ago and occupied a nesting site near Jones, La. I saw one bird at Camden July 7, and Savage reports one seen at Delight August 16. After the breeding season many of these herons wander northward and some have been found as far north as Nebraska and Wisconsin.

This species presents three phases of plumage, independent of age or sex—a pure white phase, a blue phase, and a mottled or intermediate phase. Individuals of any of the phases may be found mated and breeding with those of another color. At Wilmot, in June, I found the three phases about equally represented.

The food of this heron consists chiefly of fish, frogs, lizards, crawfish, small crabs, and insects. The rice growers of southern Texas consider it very useful on account of its fondness for crawfish, which cause trouble in the rice fields by their depredations upon the crop and by burrowing into the embankments surrounding the fields. The stomachs of 4 specimens killed near Wilmot in June contained crawfish and aquatic beetles. One bird had eaten 35 of the crustaceans and 28 beetle larvæ.

Green Heron. *Butorides virescens.*

This familiar bird, known to many by the curious name of "Indian hen," is a common and generally distributed summer resident, most numerous, however, about the ponds and swamps of the eastern part of the State. Migrants arrive from the south about the first of April and most of them depart in October, though occasionally a few winter even as far north as Fayetteville. At Mammoth Spring, in June, green herons were numerous along Spring River, and at Wilmot the same month they were abundant about the shores of the lake close to town. Partly incubated eggs were found at the latter place June 25 and at the same time well-grown young were abroad. This heron feeds chiefly upon crawfish, insects, frogs, and small fish.

Black-crowned Night Heron. *Nycticorax nycticorax nævius.*

The common night heron is apparently a rather scarce and local summer resident from April to November, found chiefly in the swamps and along the larger rivers. It was reported as breeding at Newport in 1885, and in 1902 Oberholser observed it in numbers near Texarkana (Texas) in late June. McAtee saw one bird at Turrell on November 19, and found the species numerous at Big Lake June 20 to 23, 1911. This species feeds upon fish, crabs, lizards, mice, and insects.

Yellow-crowned Night Heron. *Nyctanassa violacea.*

This species formerly occurred as a breeder in the Mississippi Valley States as far north as southern Illinois and Indiana, but in recent years the birds have been largely driven out of the northern

part of their range. At Wilmot, the last week in June (1910), I shot two immature specimens which were probably reared not far away. Three records of casual occurrence are at hand—the first, a specimen (No. 9482, U. S. Nat. Mus.) collected at Fort Smith on the Whipple Expedition in 1853–54;[1] another, a mounted specimen in the possession of Mr. S. C. Dowell, of Walnut Ridge, which was killed on Swan Pond, near that town, about the year 1900; and a third, killed at Stuttgart, April 25, 1906, by Mr. J. L. Felger.

Whooping Crane. *Grus americana.*

The big white crane was formerly quite common in migration through the Mississippi Valley, but is now very scarce. Only one definite record of its occurrence in Arkansas has been found. Mr. D. B. Wier, writing under the nom de plume of "Byrne," records one of these birds seen near Crocketts Bluff on November 5, 1882.[2]

Sandhill Crane. *Grus mexicana.*

Like the previous species, the sandhill crane was once a common migrant in Arkansas, but is now scarce. Mr. D. B. Wier, writing from Crocketts Bluff in 1881, speaks of these cranes as found on the prairies near that place in February.[3] In 1884, Mr. W. A. Monroe recorded them on March 19 and 24 at Newport, and at Delight, in 1911, Mr. W. G. Savage saw a flock of 20 on March 12 and another flock April 4.

King Rail. *Rallus elegans.*

This species, the largest of the rails, is given by Widmann as "a fairly common summer resident in the marshes along the larger rivers" in Missouri, and the same author states that it is reported by Philo W. Smith, jr., of Eureka Springs, Ark., as a rare breeder in the White River Valley near that town.[4] It undoubtedly occurs frequently in migration, though no records are at hand. It may be looked for in the spring in March and April and in the fall in October and November.

Virginia Rail. *Rallus virginianus.*

The Virginia rail is probably fairly common in migration both spring and fall. Its breeding range is from Missouri northward. The only record from Arkansas is that of Hollister, who saw one bird at Stuttgart in January, 1899.[5] Like the other rails, it is an inhabitant of marshes and is very retiring in its habits.

[1] Kennerly, Whipple's Report Route near 35th Parallel, pt. 6, in Rept. Expl. and Surv. R. R. Pac., X, p. 33, 1860.

[2] Forest and Stream, XIX, p. 308, 1882.

[3] "Byrne," Forest and Stream, XVII, p. 430, 1881.

[4] Birds of Missouri, pp. 58, 59, 1907.

[5] Wilson Bull., IX, p. 12, 1902.

Sora Rail. *Porzana carolina.*

The sora is probably a common migrant in all parts of the State, passing north in April and May and returning in September and October. In migration it may often be found in very small or partly dry marshes and even in moist upland meadows. One was seen by Mr. C. E. Pleas September 18, 1896, on Pinnacle Mountain, 800 feet above Clinton.[1] At Mena, May 24, 1910, I flushed three from a wet meadow overgrown with briers. In spite of the very late date, I consider these birds migrants, but since the species has been found breeding near Kansas City, Mo., it may perhaps breed in the higher parts of Arkansas.

Yellow Rail. *Coturnicops noveboracensis.*

The yellow rail is a rather uncommon migrant in the marshes of the Mississippi Valley and may be looked for in Arkansas in March and April and also in autumn.

The only record for the State is furnished by a specimen in the United States National Museum (No. 12641) labeled "Fort Wayne, Ark., Lieut. Eustis." This fort was located on the Arkansas-Oklahoma boundary, about 10 miles south of the Missouri line, on one of the branches of Spavina Creek.[2]

[**Purple Gallinule.** *Ionornis martinica.*

This gallinule is a common resident of the Gulf States and tropical America, and occasionally wanders into the Middle States. Audubon speaks of it as occurring rarely as far north as Memphis,[3] so it will probably be found in Arkansas.]

[**Florida Gallinule.** *Gallinula galeata.*

This species occurs locally as a summer resident over a large part of the United States, and will undoubtedly be found breeding in some of the swamps of Arkansas.]

Coot. *Fulica americana.*

This species, which is often known as "mud hen," is a common migrant in the Mississippi Valley and doubtless occurs regularly in the swamps and lakes of Arkansas, breeding locally in small numbers. Widmann, in Birds of Missouri, records it on the authority of Philo W. Smith, jr., as breeding on White River, near Eureka Springs. About half a dozen were seen at Big Lake June 20, 1911 (McAtee). A writer in the American Field speaks of the arrival of coots in numbers in Crawford County in November.[4] McAtee found them abundant on Wappanocka and Menasha Lakes November 17–23, and saw a good many on Mud Lake November 14. The coot is mainly a vegetable

[1] Osprey, I, p. 67, 1897.

[2] See Keeler's Map of the U. S. Territories, Pacific R. R. Routes, Mineral Lands, and Indian Reservations, 1867.

[3] Orn. Biog., IV, p. 38, 1838.

[4] Bowden, Geo. W. C., Amer. Field, LVII, pp. 166, 167, 1902.

feeder, living upon a variety of aquatic plants and seeds. It is said to be especially fond of wild celery, and when feeding upon that plant its flesh takes on a delicate flavor and is considered by many equal to that of most ducks.

Avocet. *Recurvirostra americana.*

This is a bird of the plains, breeding from northern Texas to Alberta. Since it has several times been observed in Missouri, it probably visits Arkansas occasionally in migration. Cabot records a specimen taken in the State, donated to the Boston Society of Natural History by Maj. Townsend.[1]

Woodcock. *Philohela minor.*

The woodcock is still fairly common in Arkansas, occurring in both winter and summer. It is recorded as breeding at Fayetteville, where one was seen carrying its young, April 1, 1882,[2] and at Clinton and Newport (rare). Hollister reports it common in January and November at Stuttgart and Harvey says it occurs at Fayetteville during open winters. This fine game bird is rapidly diminishing in numbers over a large part of its range. Unfortunately, it is not protected by the laws of Arkansas and may be shot at any time. Under such conditions its early extermination in the State seems assured.

Wilson Snipe. *Gallinago delicata.*

This popular game bird, known usually as "jack snipe," is a common migrant and winter resident. The first fall migrants arrive from the north in September, and the birds become plentiful during October. They are usually common throughout the winter in the lower parts of the State, as on the Grand Prairie around Stuttgart, where Hollister found them numerous in January, and at Van Buren, where Hanna took one and saw a number of others December 29. Harvey reports them as occurring in open winters at Fayetteville,[3] and a writer in the American Field speaks of their occurrence in December near Alma, Crawford County.[4] In spring most of them pass north between the middle of March and the middle of April. As this species is afforded no protection by the laws of Arkansas, its numbers are decreasing year by year.

[**Long-billed Dowitcher.** *Macrorhamphus griseus scolopaceus.*

Dowitchers, often called red-breasted snipe, were formerly common in migration throughout the Mississippi Valley, but like most of the shore birds they have in recent years become rare. This species undoubtedly occurred formerly and perhaps still occurs in Arkansas.]

[1] Proc. Boston Soc. Nat. Hist., II, p. 259, 1847.
[2] Harvey, Amer. Nat., XVI, p. 737, 1882.
[3] Am. Nat., XVII, p. 737, 1882.
[4] "Old-Timer," Am. Field, LII, p. 181, 1899.

Pectoral Sandpiper. *Pisobia maculata.*

This species nests in the Arctic regions and passes the winter in South America. It is one of the commonest of the migrating sandpipers and should be found along the shores of the rivers, lakes, and ponds of Arkansas during March, April, and May, and on its return journey from the middle of July to the last of November. Apparently these sandpipers have not attracted the attention of the bird students of the State, for there seems to be no record of their occurrence, except one which I made on May 15, 1910, at Arkansas City, when I observed a pair of the birds feeding in a little pool of muddy water close to the Mississippi River.

[**White-rumped Sandpiper.** *Pisobia fuscicollis.*

This medium-sized sandpiper has frequently been taken in Missouri and probably occurs regularly in Arkansas in its migrations in May and September.]

[**Baird Sandpiper.** *Pisobia bairdi.*

This species is a not uncommon migrant in the Mississippi Valley, passing northward from early March to the middle of May and southward from August to October. It doubtless occurs regularly in Arkansas.]

Least Sandpiper. *Pisobia minutilla.*

As its name indicates, this is one of the smallest of sandpipers and it is also one of the commonest. Usually it occurs in flocks of a dozen or more individuals which frequent shallow ponds and mud flats along streams, often in company with other species of shore birds. Breeding in the far north, this bird migrates south in early summer and may be found in Arkansas from July to October. It passes the winter chiefly south of the United States and returns during May and early June. Preble saw three of these sandpipers and collected one at Fort Smith September 20, 1892.

[**Semipalmated Sandpiper.** *Ereunetes pusillus.*

This little bird, scarcely larger than the least sandpiper, occurs commonly in migration with other small species of shorebirds. It passes northward in late April and early May and southward from July to October, at which times it will undoubtedly be found regularly in Arkansas.]

Greater Yellowlegs. *Totanus melanoleucus.*

The "big yellowlegs," or "winter yellowlegs," as it is frequently called, is fairly common in the Mississippi Valley during migrations. It breeds in Canada and Alaska and spends the winter from the Gulf coast to southern South America. Its northward migration occurs in April and May and its southward movement from July till November. Audubon speaks of it as quite abundant in spring and fall on the Arkansas River,[1] but in recent years it has become relatively scarce. One was seen at Monticello April 13, 1909, by Miss Cavaness.

[1] Birds of Amer., V, p. 316, 1842.

Yellowlegs. *Totanus flavipes.*

This snipe is a common migrant in the Mississippi Valley both spring and fall, occurring often in large flocks. The birds pass north on the way to their summer home on the Barren Grounds during April and May, and return southward in July, August, and September. A few remain in the United States as late as November or on the Gulf coast even through the winter, but the majority pass on to South America. Only two records from Arkansas are at hand. One bird was seen at Monticello April 13, 1909, by Miss Cavaness, and one at Stuttgart May 14, 1910, by myself.

Solitary Sandpiper. *Helodromas solitarius.*

The solitary sandpiper occurs commonly in spring and fall, never assembling in large flocks, but found singly or a few together around the borders of lakes and streams or even small pools in the timber. The first migrants arrive usually by the middle of April and about May 1 the birds are numerous, some remaining until the middle of that month. Very little is known about the breeding of this species, but its range in summer is chiefly north of the United States. In fall it returns during July, August, and September, and a few may remain until late October before passing on to their winter home in South America. It has been observed at Lake City (April 30), Blytheville (May 3), and Delight (May 5, August 25).

Western Willet. *Catoptrophorus semipalmatus inornatus.*

This large snipe, or "tattler," breeds on the coast of Texas and Louisiana and from northern Iowa northward and westward, and winters on the Gulf coast and in Mexico. It is considered rare in Missouri (Widmann), and the only record from Arkansas is one furnished by Dr. D. A. Richardson, who reported a small flock seen at Osceola March 29, 1886.

Upland Plover. *Bartramia longicauda.*

This famous game bird—the "papabotte" of the Southern States—was formerly very abundant in migration on the prairies of the Mississippi Valley, but the terrible slaughter to which it is subjected every spring, especially in Louisiana and Texas, has greatly diminished its numbers.

The species still occurs in moderate numbers on its northward passage during March and April and again as it moves south in July, August, and September. It breeds from Oklahoma and Missouri northward to Alaska. Mrs. Stephenson records this bird as a rare migrant at Helena, and Mr. Savage reports one seen at Delight August 31, these being the only records from the State. The upland plover is mainly insectivorous in its diet and is especially fond of weevils, grasshoppers, beetles, and crickets. During migration it

frequently visits cotton fields, and it has been known to destroy the boll weevil.

[**Buff-breasted Sandpiper.** *Tryngites subruficollis.*

The main migration route of this species is through the Mississippi Valley. It has frequently been observed in Texas (April and August) and may be expected to occur in Arkansas.]

Spotted Sandpiper. *Actitis macularia.*

The spotted sandpiper, or "tip-up," is one of the most widely distributed and best known of the shorebirds, and is a fairly common summer resident in the State. Arriving from the south in early April and departing in October, it feeds chiefly along the shores of rivers, creeks, and lakes, and nests in near-by fields. It has been noted in the breeding season at Lake City, Helena, Womble, and Clinton.

The food of this species consists largely of insects, including beetles, flies, grasshoppers, and may flies. It takes some crawfish and many aquatic insects, and has been known to visit gardens for cutworms and other pests.

Long-billed Curlew. *Numenius americanus.*

The "sickle-bill" is the largest of the North American shorebirds and was formerly a common migrant in the Mississippi Valley, breeding from Oklahoma north to southern Canada. It is now comparatively scarce, except on the western plains. It has been occasionally seen in western Missouri (Appleton City, April 3, 1906; Jasper County, October 15, 1905),[1] and so may be expected to occur in western Arkansas. Audubon speaks of taking a specimen of this bird in Arkansas—the only record from the State.[2]

Eskimo Curlew. *Numenius borealis.*

This curlew was formerly a common spring migrant in the Mississippi Valley, but within the last 15 years has become nearly or quite extinct. The spring flight appeared usually in Texas in March and reached the latitude of Kansas by the middle of April. In the fall the birds passed south along the Atlantic coast, reaching their winter home in Argentina chiefly by a flight over the ocean.[3] The only record of the occurrence of this bird in Arkansas is furnished by Prof. Harvey, who noted its arrival at Fayetteville March 31, 1883.

Black-bellied Plover. *Squatarola squatarola.*

The black-breasted plover, or beetlehead, is a rare or irregular transient visitant. Its northward movement is in March and April and its southward flight from August to the end of October. Two specimens were taken by Preble at Fort Smith September 19, 1892—the only record from the State.

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[1] Widmann, Birds of Missouri, p. 75, 1907.
[2] Orn. Biog., III, p. 240, 1835.
[3] Cooke, W. W., Bull. 35, Biol. Surv., pp. 74–76, 1910.

Golden Plover. *Charadrius dominicus.*

The golden plover was formerly a very abundant spring migrant in the Mississippi Valley during March and April, but in recent years its numbers have been greatly reduced by constant persecution, so that now it is infrequently seen. In the fall most of these plovers migrated south from their breeding grounds on the Arctic tundras to their winter home on the pampas of Argentina, by a long flight over the Atlantic Ocean.[1] A few, however, passed south through the Mississippi Valley. They were reported plentiful at Fayetteville March 20 to 31, 1883 (Harvey), and a small flight was seen near Crocketts Bluff October 22, 1882.[2]

Killdeer. *Oxyechus vociferus.*

The killdeer was formerly a common summer resident over most of the United States, but now is rare in many sections. It was reported as breeding at Clinton in 1889, but none were observed anywhere in the State during my 1910 trip (May–July). It still occurs frequently in migrations and is recorded as common in winter (November to January) on the Grand Prairie about Stuttgart (Hollister) and at Van Buren (Hanna). The first arrivals were noted at Fayetteville March 1 (Harvey, 1883). Two were seen at Delight, November 7 (Savage), and a few at Mud Lake, November 13, and at Turrell, November 17–19 (McAtee).

[**Semipalmated Plover.** *Ægialitis semipalmata.*

This little plover, often known as the "ringneck," is a common migrant in the Mississippi Valley, occurring chiefly in April and May, and again in July, August, and September. It will probably be found as a regular transient in Arkansas.]

[**Piping Plover.** *Ægialitis meloda.*

The piping plover is an uncommon migrant in the Mississippi Valley, occurring in Missouri in May, August, and September (Widmann). It may be looked for during the same months in Arkansas.]

Ruddy Turnstone. *Arenaria interpres morinella.*

The turnstone nests in the Arctic regions and winters from the Gulf coast southward. It is known as a rather uncommon transient visitant in the Mississippi Valley during August and September and less frequently in spring. It was reported by Dr. Richardson in 1886 as a "rare migrant" at Osceola, the only record from the State.

Bobwhite. *Colinus virginianus.*

The bobwhite or quail is generally distributed in the State, and may be found in all cleared sections from the Mississippi bottoms to the tops of the highest mountains. It was formerly abundant

[1] Cooke, W. W., Bull. 35, Biol. Surv., pp. 80–85, 1910.

[2] "Byrne" [D. B. Wier], Forest and Stream, XIX, p. 286, 1882.

nearly everywhere, but is now scarce in many localities, particularly near the larger cities. If protected under a properly enforced game law it should remain indefinitely one of the important assets of the State. Gunners of wide experience assert that the quail of Arkansas are noticeably smaller in bulk than those living in the Northern States, but the differences, if any, are too intangible to warrant their separation into a named race. The breeding season of this bird extends from May to September, so that in many instances probably two broods are raised. At Lake City, April 28, some of the birds were paired, and I flushed a male and female from a freshly made nest under an upturned furrow in a plowed field. On September 25 (1892), at Fayetteville, Preble noted young quails but a few days old. At Delight, Savage found fresh eggs on August 1 and saw young just able to fly on September 28.

The food of the bobwhite consists mainly of weed seed, which forms over half of its total food. Grain constitutes only about one-sixth of the total and most of this is waste grain taken from stubble fields. Fruit amounts to about 10 per cent of the total food, and insects to about 15 per cent.

Ruffed Grouse. *Bonasa umbellus.*

In early times the ruffed grouse, or "pheasant," as it is called in the South, was probably a common inhabitant of the Ozark region of northwestern Arkansas, but it is now completely exterminated in the State. As long ago as 1883 it was reported by Prof. Harvey to be "very scarce" in the region about Fayetteville, and this, so far as I can find, is the only positive record of the occurrence of the bird in Arkansas. It has become very scarce in Missouri also, but Widmann gives a record for Shannon County as recently as the winter of 1905–6.

Prairie Chicken. *Tympanuchus americanus.*

Prairie chickens were once locally common in the State, but with the increase of hunters in recent years their numbers have been greatly reduced and in many sections they have been exterminated. Prof. F. L. Harvey, writing in 1883, recorded them as "formerly plentiful but now rare" in the vicinity of Fayetteville. He stated also that they were "resident on the Grand Prairie of southeastern Arkansas, as well as on the prairies south of the Arkansas River."[1] In a list of birds furnished by Mr. W. A. Monroe in 1884 this species is given as a breeder near Newport. Hollister records it as abundant in 1899 on the Grand Prairie near Stuttgart, but says that none were seen there in 1900. Inquiries which I made at the same place in 1910 elicited only the indefinite information that a few could be found in the remoter parts of the region. This valuable bird is so near extinction in the State that only a protective law rigidly enforced for a long term of years can save it from complete extermination.

[1] Letter on file in Biological Survey.

Wild Turkey. *Meleagris gallopavo silvestris.*

Wild turkeys were formerly abundant over the whole State. They are still fairly numerous in the wilder parts of the heavily timbered bottoms in the eastern counties, but they are practically exterminated in the Ozark region of the northwest and in the more thickly settled regions generally. They were reported as common at Fayetteville in 1883 (Harvey); at Clinton in 1890 (Pleas); at Stuttgart in 1899 and 1900 (Hollister); and on White River below Clarendon in 1906.[1] During my 1910 trip I learned that they are still found in moderate numbers in the timbered bottoms near Blytheville and Turrell. McAtee found them numerous at the latter place and at Mud Lake in November and heard that they are still plentiful along Pemiscot Bayou, below Big Lake. A few are reported on Rich Mountain, in Polk County, but in the hill country around Pettigrew, where they were formerly common, all have disappeared. Mrs. Stephenson reports them still numerous near Helena. If this fine game bird is to be saved as an asset of the State, the open season must be very much restricted and a bag limit established.

Passenger Pigeon. *Ectopistes migratorius.*

The wild pigeon, once enormously abundant over a large part of the eastern United States, is now practically if not wholly exterminated. It occurred in Arkansas as a migrant and winter resident. In 1883 Prof. Harvey reported it very plentiful in winter at Fayetteville, and in 1889 Pleas noted the arrival at Clinton on April 9 of three flocks, numbering in all 36 birds. Mr. L. R. Morphew mentions the occurrence of a small flock of pigeons near Hot Springs about 1892—the last ones seen in that vicinity.[2] The last stronghold of these birds seems to have been in the extreme northwest part of Arkansas. The last shipment received by one game dealer of St. Louis came from Siloam Springs, Benton County, about 1893,[3] and Mr. O. Widmann informs me that as late as 1902 another St. Louis dealer received 12 dozen pigeons from Rogers, in the same county.

Mourning Dove. *Zenaidura macroura carolinensis.*

The mourning dove is a common summer resident throughout the greater part of Arkansas, but is less common in the mountains than in the lowlands. In fall and winter most of the doves which nest in the mountainous parts of the State move down into the lowlands, where they are joined by others from the States to the north. They are common all winter on the Grand Prairie (Hollister) and in other favorable localities. Hanna saw a flock of 25 at Van Buren

[1] Bacon, W. J. Amer. Field, LXVII, p. 362, 1907.
[2] Forest and Stream, LXVIII, p. 536, 1907.
[3] Deane, Auk, XII, p. 298, 1895.

on December 17. Nesting begins in the spring early in April (eggs found at Helena April 7) and may continue throughout the summer until September. The food of this species consists mainly of weed seed, which forms about two-thirds of the total, and grain makes up the remainder. The grain eaten is almost entirely waste kernels gleaned from stubble fields. The bird is thus seen to be highly beneficial in its food habits and well worthy of protection by the farmer.

Turkey Vulture. *Cathartes aura septentrionalis.*

Turkey buzzards are generally distributed over the State and are equally common in mountains and lowlands. They remain throughout the winter even in the Ozark region (common at Fayetteville) and in some sections are even more abundant at that season than in summer, since their numbers are increased by many birds from the more northern States.

Nests may be found in hollow logs or stumps in secluded parts of the timbered bottoms or in caves or crevices in rocky bluffs. While exploring a steep bluff along White River at Cotter June 8, I came upon two young buzzards in a cave near the top of the bluff. They were about half grown and were covered with white down. They stood up and hissed at me as long as I remained in sight. As is well known, these birds feed exclusively on carrion, and in warm climates render an important service by removing offensive carcasses.

Black Vulture. *Catharista urubu.*

The black vulture, or carrion crow, is more southern in its distribution than the turkey buzzard and is not usually found much beyond the limits of the Lower Austral Zone. It is generally distributed in the lower parts of the State, though usually less abundant than the turkey buzzard, with which it often associates.

It remains all winter in some localities and was reported common in January at Crocketts Bluff, when about 100 were seen feeding on a dead horse.[1] I have observed it at Wilmot, Eldorado, Camden, Stuttgart, Arkansas City, and Walker Lake. Savage has noted it a few times at Delight during June, July, and August. In the Ozark region it occurs locally, having been reported as a common resident at Clinton (Pleas) and at Fayetteville (Harvey).

Swallow-tailed Kite. *Elanoides forficatus.*

This handsome and graceful hawk nests locally in the Mississippi Valley, but is nowhere very common and is growing scarcer every year. Widmann speaks of it as "a regular, though not numerous, summer resident" in the cottonfield region of southeastern Missouri, but I failed to find any there in 1909, nor did I observe the bird in

[1] "Byrne" [D. B. Wier], Forest and Stream, XX, p. 45, 1883.

Arkansas in 1910. In 1884 it was reported to breed at Newport and in 1890 in Little River County, and doubtless at that time was fairly numerous in the lowlands of the State, nesting chiefly in the cypress swamps. At present this interesting and useful species must be extremely rare. Its food consists largely of snakes and other reptiles, beetles, grasshoppers, cotton worms, and small frogs.

Mississippi Kite. *Ictinia mississippiensis.*

This species occurs as a summer resident in the Mississippi Valley as far north as southern Illinois. Widmann considers it common in southeastern Missouri and, although it has been reported from Arkansas only a few times, it probably occurs locally in the eastern part of the State. Mr. S. C. Dowell, of Walnut Ridge, has in his possession a mounted specimen of this bird taken near that town. In 1884 the species was reported as breeding at Newport. This bird, like the swallow-tailed kite, subsists largely on insects, small snakes, and frogs.

Marsh Hawk. *Circus hudsonius.*

One of the best-known hawks in the United States, this species is easily recognized as it flies low over the fields and marshes, by the conspicuous white patch at the base of its long tail. It is a common migrant and winter resident and may occur rarely as a breeder. It was reported to breed at Newport in 1884, and was seen in migration at Fayetteville September 28 (1892). At Delight, Mr. Savage noted it frequently during the winter. Study of its food habits has shown it to be a beneficial species, feeding chiefly upon meadow mice and other small rodents, lizards, frogs, snakes, insects, and, to some extent, on small ground-dwelling birds. It occasionally preys upon dead and wounded ducks and other game birds left by hunters, but seldom chases birds on the wing.[1] Unfortunately it is not very suspicious, and thus often falls prey to the thoughtless sportsman, who shoots all hawks on sight on the theory that they kill chickens and game birds.

Sharp-shinned Hawk. *Accipiter velox.*

This little hawk is widely distributed in the United States, but is not usually common in Arkansas, although it may at times be plentiful in migration. It was reported as a rare breeder at Clinton in 1890, arriving from the south on April 6, and has been reported to breed also at Newport. Its fall migration is performed chiefly in September and October. Several were seen by Preble at Fort Smith September 15 to 23 and at Fayetteville September 24 to October 1; Savage noted the first in fall at Delight on September 22 and by October 20 they had become common. They remained

[1] Fisher, A. K., Bull. 3, Div. Orn. and Mamm., pp. 26–28, 1893.

there during most of November and one was seen on February 2 (1911). This is one of the few hawks which can be classed as decidedly harmful, since its food consists largely of wild birds and young poultry, varied occasionally with mice, insects, or small reptiles.

Cooper Hawk. *Accipiter cooperi.*

The Cooper hawk resembles the sharpshin in general appearance, but is much larger. It is generally distributed in North America, and is not uncommon in Arkansas. Savage collected a specimen at Delight, September 25, 1910, and observed the species frequently in January. Hanna saw the bird twice in December in the hills near Van Buren. It occurs locally in summer, but the only record at that season is from Delight, where Savage collected a set of four eggs May 4, 1911. This bird is a swift and fearless hunter and is responsible for a good share of the damage to poultry attributed to the larger hawks. Its food consists almost entirely of wild birds and poultry, but occasionally it captures small mammals, reptiles, batrachians, and insects.

Red-tailed Hawk. *Buteo borealis.*

The redtail occurs as a rare breeder and a fairly common winter resident. It was reported to be a tolerably common summer resident at Newport in 1884 and at Clinton in 1890. One was seen at Fayetteville September 29, 1892 (Preble), and the species was reported common in winter in the vicinity of Stuttgart (Hollister) and Van Buren (Hanna). McAtee observed one each near Forrest City, Turrell, and Menasha Lake in November, 1910. This is one of the larger hawks and shares with several other species the name "hen hawk." Careful study of its food habits by the Biological Survey has shown that the bird does not merit the title, since mice and other injurious rodents constitute fully four-fifths of its food and poultry (including game birds) only one-tenth. So great is the prejudice against all large hawks, however, that they are subjected to constant persecution by farmers and hunters, with the result that this species, with others, in many sections has become very scarce.

[**Harlan Hawk.** *Buteo borealis harlani.*

This dark form of the red-tailed hawk is supposed to be an inhabitant of the lower Mississippi Valley, but its status as a recognizable subspecies is open to doubt. Hollister records it as fairly common in winter on the Grand Prairie around Stuttgart, where he shot typical specimens.][1]

Red-shouldered Hawk. *Buteo lineatus.*

The red-shouldered hawk is a resident of the swamps and river-bottom woods throughout the State, and in such situations its shrill cries may frequently be heard. I found it common almost everywhere in eastern Arkansas, but did not observe any in the moun-

[1] Wilson Bull., IX, p. 13, 1902.

tainous sections. It breeds at Lake City, Walker Lake, Turrell, McGehee, Camden, and Wilmot. Two adult specimens taken at Wilmot the last week in June were molting, and at the same time and place two fully grown young birds were secured. Preble found the species common at Fort Smith and saw a few at Fayetteville in September, 1892. Savage reports it uncommon at Delight in summer, and Hollister records it as "tolerably common" around Stuttgart in winter. This hawk is a most beneficial species, feeding chiefly on mice and other small mammals, snakes, frogs, insects, and very rarely on birds. Two of the hawks collected at Wilmot had been feeding on a chicken. In the stomachs of the other two there were beetles, caterpillars, a grasshopper, a spider, and a toad. Of 220 stomachs of this hawk examined in the Biological Survey, only two contained remains of poultry and only 13 remains of other birds, while 102 contained mice. In spite of these well-known facts, the hawks are relentlessly destroyed by farmers on the mistaken theory that they are inveterate chicken thieves.

Broad-winged Hawk. *Buteo platypterus.*

The broadwing occurs as a migrant and a locally common summer resident. In 1890 it was reported as a common breeder at Clinton, arriving from the south February 18. Mr. Savage noted one at Delight, Pike County, on March 21, 1910, and Mrs. Stephenson reports it as a summer resident at Helena. I did not observe the species in the State, but shot a young bird June 15 in Oregon County, Mo., about a mile from Mammoth Spring, Ark. Bendire speaks of this hawk as "eminently a bird of the larger forests, and seldom seen in the more open and cultivated country;" while Widmann says that in Missouri it "prefers undulating ground where wooded tracts, even of medium-sized trees, adjoin creek bottoms, wet meadows, and cultivated fields." The broadwing is one of the beneficial hawks, its food consisting largely of small mammals, reptiles, batrachians, and insects.

[**Golden Eagle.** *Aquila chrysaëtos.*

The golden eagle is a common bird in the western United States and has frequently been taken in Missouri in winter. It probably occurs irregularly in Arkansas, and may possibly breed in the mountainous parts of the State.]

Bald Eagle. *Haliæetus leucocephalus.*

This fine bird is a rather rare resident in the wilder sections of the State, chiefly in the big swamps of the eastern part. It was reported to be rare at Osceola in 1886, near Clinton in 1890, and near Helena in 1910. One was seen at Clinton on February 9, and Hollister reports a few in winter in the vicinity of Stuttgart (1899 and 1900). Mr. S. C. Dowell, of Walnut Ridge, has in his possession a mounted

specimen which was killed in Lawrence County. One was shot in January, 1896, from a fence in the town limits of Helena. It is known to breed rarely near that town and also in the big swamps west of Wilmot, where a specimen was killed in June, 1910, by Mr. E. M. McCormick.

This bird is seldom found far from lakes or streams, where it can obtain its favorite food. In addition to fish, which form more than half its food, it destroys many birds, chiefly water fowl, and considerable numbers of mammals, mainly the smaller kinds, and the young of larger species. Occasionally it attacks domestic animals, such as lambs and pigs. Oberholser, after treating exhaustively of its food habits, concluded that it "is rather more beneficial than otherwise." [1]

Duck Hawk. *Falco peregrinus anatum.*

This bold and attractive falcon, although never abundant, was in former years locally common in the Mississippi Valley, nesting usually about cliffs, but occasionally also in cavities in tall trees in the bottom lands. Widmann gives numerous records of its former occurrence in Missouri, but considers it now decidedly rare and probably only a migrant. The only record from Arkansas seems to be one published by Bendire on the authority of Mr. B. T. Gault, who reports the bird nesting in the spring of 1888 in the sandstone bluffs along the Little Red River in Cleburne County.[2] The duck hawk feeds almost exclusively on birds, and when living in the vicinity of settlements often does serious damage to poultry and pigeons.

Pigeon Hawk. *Falco columbarius.*

The pigeon hawk nests chiefly north of the United States, but is a rather common migrant and winter resident in the Southern States. In 1890 it was reported rare in the vicinity of Clinton, one being seen on January 20, another February 18. Hanna saw one in December, 1910, near Van Buren. There are no other records from the State, but the bird is doubtless of regular occurrence in fall and winter. The food of this little hawk consists chiefly of the smaller wild birds up to the size of a pigeon, with the addition of a few insects and small mammals. It almost never attacks full-grown poultry, but is sometimes quite destructive to young chickens.

Sparrow Hawk. *Falco sparverius.*

This handsome little hawk—the smallest of its tribe—is a fairly common resident, nesting in hollow trees about open fields. In winter it is perhaps even more common than in summer, for its numbers are at that season increased by migrating individuals from

[1] Bull. 27, Biol. Survey, p. 16, 1906.

[2] Life Hist. N. Am. Birds [I], p. 294, 1892.

the more northern States. The species has been reported as a common resident at Fayetteville, Fort Smith, Clinton, Newport, Osceola, and Helena. I saw it in summer at Armorel, Wilmot, and Camden, and Savage reports a few seen at Delight. In winter it is reported very common on the Grand Prairie around Stuttgart (Hollister) and near Van Buren (Hanna). It is a decidedly useful species, its food consisting during the summer almost exclusively of insects. It is especially fond of grasshoppers and, when these pests are abundant, selects them in preference to any other food. In winter its diet is varied with mice and other small mammals, lizards, snakes, and small birds.

Osprey. *Pandion haliaëtus carolinensis.*

The osprey, or fish hawk, was formerly a common summer resident along the larger rivers of the State, but of late years it has become very scarce. It was reported as breeding at Newport in 1884 and at Osceola in 1886. Mr. B. T. Gault saw it in May, 1888, on the upper White River, near the Missouri boundary,[1] and found it nesting in holes in the sandstone bluff along Little Red River, central Arkansas.[2] Preble saw one at Fort Smith September 19, 1892. I did not observe any during my 1910 trip. The food of this species, as indicated by its common name, consists wholly of fish. Even where it is abundant, however, as on the Atlantic coast, the toll it levies on fish is considered to be offset by its graceful appearance and interesting habits.

Barn Owl. *Aluco pratincola.*

The barn owl is a common resident of the lower Mississippi Valley and occurs rarely as far north as Missouri. It probably occurs generally in the lowlands of Arkansas, but not in the mountainous sections. Mr. H. S. Reynolds records the species at Judsonia, in the winter of 1876–77,[3] Mrs. Stephenson reports it as resident at Helena, and Mr. Savage took a specimen at Delight, June 1, 1911. This large owl is one of the strictly beneficial species, its food consisting almost exclusively of mice, rats, and other small mammals.

Long-eared Owl. *Asio wilsonianus.*

This owl breeds in Canada and the United States as far south as Arkansas and winters mainly in the United States and Mexico. It was reported as breeding at Newport in 1884 and "resident" at Clinton in 1890. Hollister records it common in winter near Stuttgart, and Savage took a specimen at Delight on November 17. It is apparently rare in most parts of the State. It is a bird of the deep woods and is rarely observed. This is another of the useful birds of

[1] Widmann, O., Birds of Missouri, p. 104, 1907.
[2] Bendire, Life Hist. N. Am. Birds [I], p. 323, 1892.
[3] Am. Nat.,XI, p. 308, 1877.

prey which is persistently slaughtered at every opportunity under the mistaken notion that it kills chickens. Its food consists chiefly of mice and other small mammals, with a small percentage of wild birds.

Short-eared Owl. *Asio flammeus.*

The short-eared owl is almost cosmopolitan in its distribution, but is known to occur in the breeding season in the United States no farther south than Missouri. In winter it moves southward and is often found in flocks in various parts of the United States. It prefers more open country than most other owls, habitually seeking its food and building its nest on the prairies or marshes. Hollister recorded its presence in small numbers in winter on the Grand Prairie around Stuttgart, and it is doubtless generally distributed at that season over the prairie lands of the State.

Barred Owl. *Strix varia varia.*

The barred owl, or "hoot owl," as it is frequently called, is probably the most abundant member of its family in the State. A few may be found in nearly every large tract of river-bottom timber and it is particularly common in the heavy swamps of the eastern counties. It is a permanent resident wherever found. The range of the northern subspecies can not be defined, since no specimens of this form are available; but it probably occupies the mountainous regions in the northern and western parts of the State. Records of barred owls from Fayetteville and Chester are doubtless referable to the northern bird. This owl has been accused of visiting chicken roosts and carrying off young or half-grown fowls, but examination by the Biological Survey of over 100 stomachs of this species demonstrated that its food ordinarily consists chiefly of mice and other small mammals, insects, birds, crawfish, frogs, and fish. Only three of the stomachs examined contained poultry. Hence the barred owl is considered in the main a beneficial species and worthy of protection.

Florida Barred Owl. *Strix varia alleni.*

The southern form of the barred owl occurs in the southern half of Arkansas, as shown by specimens from Wilmot, Delight, and Van Buren, and its range very probably extends northward in the bottom lands of the Mississippi to the northern border of the State. Barred owls have been observed at Lake City, Walker Lake, Newport, and McGehee. Hollister records them common in winter at Stuttgart. At Wilmot, the last week in June, a number of these owls roosted every day in a patch of overflowed timber, and at dusk one evening I saw three fly out and sail leisurely down to a near-by slough, where they procured their food. In this slough, about 8 o'clock one morning, I shot a fully grown young one from the thick lower branches of an oak. Examination of this bird's stomach showed that it had eaten a crawfish and a cutworm.

Saw-whet Owl. *Cryptoglaux acadica.*

The saw-whet, the smallest owl found in the eastern United States, occurs commonly in the Northern States, but in the lower Mississippi Valley is a rare or accidental winter visitant. There is but one record from Louisiana and one from Arkansas, based on an entry in the catalogue of the United States National Museum of a specimen (No. 3891) collected at Fort Smith by the Whipple Expedition of 1853–54. The specimen itself can not now be found, and considerable doubt attaches to the correctness of the record, especially in view of the fact that Lieut. Whipple's party was at Fort Smith only a few days in the early part of July—a time of year when this owl would not be expected to occur so far south.

Screech Owl. *Otus asio asio.*

This familiar little owl is generally distributed in the State, but is more often heard than seen. It remains throughout the year, nesting in hollow trees or sometimes in bird boxes or cavities around farm buildings. No specimens of the northern form (*asio*) are known to have been taken in Arkansas, but it probably will be found in the higher parts of the State. Records of its occurrence at Fayetteville, Clinton, and Mammoth Spring are considered referable to this subspecies. In its food habits the screech owl is almost wholly beneficial, feeding largely on mice and insects and less frequently on small birds, lizards, frogs, and crawfish. With the increase of English sparrows this owl has acquired a fondness for these pests, and this fact, coupled with its habit of hunting mice around barnyards and grain stacks, should lead every farmer to protect it as far as possible.

Florida Screech Owl. *Otus asio floridanus.*

This southern form of the screech owl probably inhabits the southern and eastern parts of Arkansas. Several specimens, including both red and gray individuals, have been taken at Delight by Savage, and Hanna took one at Van Buren. Screech owls, doubtless of this subspecies, are reported fairly common at Wilmot, Stuttgart (Hollister), Helena, and Osceola.

Great Horned Owl. *Bubo virginianus.*

This owl, one of the largest and fiercest of its tribe, is generally distributed in the State, but in most sections is not very common. It was reported as a resident and breeder at Newport (1884) and Clinton (1890), and Preble killed one at Fayetteville, September 28, 1892. Savage reports it fairly common at Delight, and McAtee noted it at Turrell and Menasha Lake. I did not observe any during my 1910 trip. This species is notoriously destructive to poultry and game birds, but it also feeds extensively on mice, rats, rabbits, and other small mammals. It captures also a few small birds and some

insects. In thickly settled regions it may at times become a nuisance, but in the sparsely settled West it is one of the most useful birds of prey, feeding very largely upon rabbits and other destructive rodents.

Snowy Owl. *Nyctea nyctea.*

The snowy owl is a resident of the frozen North and visits the United States only in winter. There are numerous records from Missouri, but south of that State the species is a very rare straggler. The only record for Arkansas is one given by Audubon, who states that this owl occurs in winter on the Arkansas River.[1]

Carolina Paroquet. *Conuropsis carolinensis.*

This handsome and interesting bird—the only representative of its family in the eastern United States—was formerly common in the South Atlantic and Gulf States and the Mississippi Valley generally as far north as Iowa. At the present time it is restricted probably to Florida and even there is rare and local. Its extermination in the Mississippi Valley was practically accomplished about 20 or 25 years ago, although a few stragglers have been seen in Missouri and Kansas as recently as 1905.[2] Bendire records it as comparatively common in the Mississippi and White River Valleys in 1860, and mentions seeing large flocks throughout that year in the vicinity of Fort Smith.[3] Mr. B. T. Gault, writing in 1888, says: "At one time paroquets were very plentiful at Paroquet Bluff, between Newport and Batesville on the White River, but none have been seen there for at least eight years."[2]

Mr. O. P. Hay, in 1881, stated that paroquets had recently been seen in southeastern Arkansas,[4] and in 1885 Mr. W. A. Monroe reported them as summer residents at Newport.

The food of the paroquets consisted of a variety of wild seeds, nuts, fruits, and berries. They were fond also of cultivated fruit and were accused of damaging corn and other grain when in the milk. This habit, coupled with their confiding nature and their habit of flocking about wounded comrades, furnished the cause and the opportunity for their extermination by man.

Yellow-billed Cuckoo. *Coccyzus americanus.*

The yellowbill is the common species of cuckoo or "rain crow" in Arkansas, where it is generally distributed as a summer resident. The average date of its arrival at Helena is April 25 (earliest, April 19) and the last one at Delight in autumn was noted September 25. It has been observed also at Fayetteville, Clinton, Newport, Mammoth Spring, and other places. Cuckoos inhabit a variety of situations in both mountains and lowlands, choosing usually for their nesting site

[1] Orn. Biog., II, p. 135, 1834.
[2] Widmann, O., Birds of Missouri, p. 116, 1907.
[3] Life History N. Am. Birds [II], p. 1, 1895.
[4] Bull. Nutt. Orn. Club, VII, p. 93, 1882.

a thicket or low tree in some secluded spot. I found them unusually numerous at Wilmot the last week of June in cypress trees along the shore of a lake. This species is known to be exceedingly useful, feeding exclusively on insects and showing a decided preference for caterpillars, including the hairy kinds rejected by many birds. In the cotton fields of Texas I found it in large numbers, destroying great quantities of cotton-leaf worms (*Alabama argillacea*).

Black-billed Cuckoo. *Coccyzus erythropthalmus.*

The black-billed cuckoo is much rarer than the yellow-billed and is known to breed in the State only in the Ozark region. The only records are those furnished by Widmann,[1] who says: "In the Ozarks it is reported as a breeder as far south as Heburn [=Heber], Cleburne Co., Ark., by Mr. B. T. Gault in 1888, and at Eureka Springs by Mr. Philo W. Smith, Jr., in 1906." This cuckoo is essentially similar in its habits to the more common species, and like it deserves the fullest protection.

Belted Kingfisher. *Ceryle alcyon.*

The kingfisher is found in moderate numbers on practically all the streams, lakes, and ponds of Arkansas, but is most numerous in the well-watered sections in the eastern part. It is a hardy bird, many individuals remaining throughout the winter in the warmer parts. It has been observed in summer at Mammoth Spring, Clinton, Pea Ridge, Wilmot, Womble, and other places, and has been recorded in winter at Helena, Van Buren, and Judsonia;[2] Mud Lake, November 13; and Turrell, November 19. The food of this bird consists almost exclusively of fish, the larger part of which is of species of little value to man. When fish are difficult to obtain, it occasionally has recourse to other food, such as crawfish, insects, and even vegetable matter, as the berries of the sour gum.[3]

Ivory-billed Woodpecker. *Campephilus principalis.*

This noble bird, the largest of its family in the United States, was formerly common in the heavy swamps of the Mississippi Valley as well as the Southeastern States generally. Through constant persecution its numbers have been greatly reduced everywhere and it has been exterminated over a large part of its range. A few are believed to remain in the wilder parts of southeastern Arkansas. A writer in Forest and Stream, in 1885, states that in the region about Newport the ivorybill "may be found in unfrequented swamps," and adds: "It is not rare, but is rarely met with."[4] It was reported from Osceola in 1887 by Dr. Richardson, and Mrs. Stephenson says that in 1910 the ivorybill is "reported by fairly reliable people" as still

[1] Birds of Missouri, p. 118, 1907.
[2] Reynolds, H. S., Amer. Nat., XI, p. 307, 1877.
[3] Bendire, Life Hist. N. Am. Birds [II], pp. 36-37, 1895.
[4] "Yell," Forest and Stream, XXIV, p. 407, 1885.

occurring near Helena. Some persons do not distinguish this species from the pileated woodpecker, with which it shares the names of "logcock," "woodcock," "woodchuck," etc. It has been ruthlessly destroyed by hunters for mere sport or for the sake of its brilliant scalp or its polished white bill. Never widely distributed, this useful and interesting bird has become yearly more restricted in its range, until now it is on the verge of extinction.

Hairy Woodpecker. *Dryobates villosus villosus.*

The hairy woodpecker is generally distributed throughout the State in both summer and winter, but is nowhere very common. The northern form (*villosus*) has been found breeding at Mammoth Spring and at Clinton. One specimen was taken at Van Buren December 7. The range of this subspecies within the State can not be exactly defined, but it doubtless occupies only the Ozark region and its foothills. Its food habits are similar to those of its smaller relative, the downy woodpecker, and like it the hairy is considered decidedly useful.

Southern Hairy Woodpecker. *Dryobates villosus auduboni.*

This subspecies, a somewhat smaller bird than the northern form, probably occupies the southern half of the State and the Mississippi bottoms. A specimen was taken at Armorel, Mississippi County (May 5), and the bird was observed in small numbers at Turrell, Wilmot, Camden, Delight, and Rich Mountain.

Southern Downy Woodpecker. *Dryobates pubescens pubescens.*

The little downy woodpecker is common in all parts of the State and is equally at home in the deep swamps and on the dry rocky slopes of the mountains. It is nonmigratory and nests throughout its range. Specimens were taken at Turrell, Wilmot, and Rich Mountain, and the species was observed at Mammoth Spring, Lake City, Eldorado, and Camden. Savage reports it fairly common at Delight. The downy is considered the most useful of all our woodpeckers. Stomach examinations made in the Biological Survey showed that three-fourths of its food is made up of insects, few of which are useful kinds. The balance of its diet consists of wild fruits, berries, and nuts.

Downy Woodpecker. *Dryobates pubescens medianus.*

The northern and slightly larger form of the downy woodpecker has been taken at only one locality in the State, Van Buren, where 6 specimens were secured by Mr. G. Dallas Hanna between November 29 and January 7. Whether these birds were migrants or representatives of the breeding form of the Ozark region can not be decided until breeding specimens are secured from that part of the State. Hollister has recorded *medianus* from Stuttgart in winter, but he took no specimens, and the southern form very probably occurs there also.

Red-cockaded Woodpecker. *Dryobates borealis.*

This southern woodpecker is of very local distribution in the State and seems to be confined to pine woods. It was reported as breeding rather commonly near Clinton in 1890 and a specimen from there was identified in the Biological Survey. Mr. W. A. Monroe, of Newport, found it breeding near there in 1884 and killed several specimens. Mr. B. T. Gault observed the birds daily in the summer of 1888 in pine woods at Heber, Cleburne County,[1] and Mr. Savage saw three individuals at Delight, October 14, 1910, although none had been observed there during the summer.

Yellow-bellied Sapsucker. *Sphyrapicus varius.*

The sapsucker is a northern-breeding species, found in the nesting season from the latitude of St. Louis northward and occurring in Arkansas as a spring and fall migrant and winter resident. It has been recorded in winter at Delight and Judsonia.[2] Hanna took 8 specimens at Van Buren between December 6 and 28, and doubtless it is common at that season over the greater part of the State. Spring migration takes place mainly in late March and early April, the first arrival at Clinton having been noted on April 7 and at Delight on April 5. The fall migration is chiefly during October, the first birds having been seen at Delight on the 15th and the species was common by the 20th. Its occurrence in summer has been reported by Mr. W. A. Monroe, who found a number of the birds in the hills 50 miles west of Newport in June, July, and August, 1884.[3] No nests or young birds were observed and the record, being unsubstantiated by specimens, is open to considerable question, since the species has never been found elsewhere in the Mississippi Valley so far south in summer. This is the only one of the woodpeckers of the State which is fairly entitled to be called a "sapsucker." It is known to do considerable damage to certain forest and orchard trees, including birch, maple, oak, ash, apple, and other species, by puncturing the bark in the form of girdles, sometimes causing the death of the trees. The birds feed both on the sap which flows from the punctures and on the insects attracted to the sap. Their food includes also large numbers of forest insects, as well as wild fruits and berries.

Pileated Woodpecker. *Phlœotomus pileatus.*

This large woodpecker, known under the vernacular names of "woodcock," "logcock," "woodchuck," etc., is quite common and generally distributed in the heavily timbered parts of the State. It is nonmigratory and breeds throughout its range, having been

[1] Widmann, O., Birds of Missouri, p. 121, 1907.
[2] Reynolds, H. S., Am. Nat., XI, p. 308, 1877.
[3] Cooke, W. W., Bull. 2, Div. Econ. Orn., p. 130, 1888.

reported from Clinton (where eggs ready to hatch were found on April 28), Newport, Helena, Mammoth Spring, Fayetteville, Stuttgart, Wilmot, and Delight. This bird is ordinarily rather shy, but many of the less experienced individuals fall victims to thoughtless gunners. Its food consists chiefly of forest insects (particularly the larvæ of wood-boring beetles) and some wild fruits.

Red-headed Woodpecker. *Melanerpes erythrocephalus.*

The redhead is an abundant resident in all parts of the State and especially favors cultivated lands containing much dead timber. Irregularly migratory in the northern parts of its range, it is found in Arkansas throughout the year, and is perhaps more abundant in winter than in summer. It has been observed at Fayetteville, Rich Mountain (at 2,600 feet), McGehee, Lake City, Mammoth Spring, and other places.

This woodpecker has been frequently accused of pulling up newly sprouted corn, and it has a decided taste for cultivated fruit and berries. On the other hand, stomach examinations have shown that corn forms only about 7 per cent of its total food and that about half of its food consists of insects, the larger part of which are beetles, ants, and grasshoppers. At Van Buren, where the bird was common in December, Hanna noticed its habit of storing acorns and other nuts in hollows in trees.

Red-bellied Woodpecker. *Centurus carolinus.*

Although less numerous than the redhead, this woodpecker is a fairly common resident in nearly all sections. It is reported common in winter at Stuttgart (Hollister), Van Buren (Hanna), and Fayetteville.[1] It has been observed also at Clinton, Lake City, Helena, Wilmot, Camden, and other places.

This species eats more vegetable matter than any other woodpecker, its diet including a variety of wild fruits and berries, besides many insects.

Flicker. *Colaptes auratus auratus.*

The flicker, or yellow hammer, is a fairly common resident in both winter and summer. Many migrants pass through in spring and fall, and many from farther north spend the winter in the State. The ranges of the northern and southern forms are not accurately known, but the typical race (*auratus*) will probably be found breeding in the southern and eastern parts of the State. The flicker has been reported as a summer resident at Newport, Helena, Wilmot, and Delight, but is not usually an abundant bird at this season. In its diet this species shows a special fondness for ants, which constitute nearly half of its food, and a single bird has been known to consume

[1] Cooke, W. W., Orn. and Ool., VIII, p. 34, 1883.

over 3,000 of these insects at a meal. In addition, flickers capture many beetles and other insects and take a large variety of wild fruits, berries, and seeds. Corn and other grains are only rarely eaten.

Northern Flicker. *Colaptes auratus luteus.*

The northern form of the flicker occurs as a breeder only in the mountainous parts, but in winter it may be found more or less frequently throughout the State. Breeding specimens were taken at Mammoth Spring, and the bird is reported in summer from Fayetteville and Clinton. In winter it is recorded as abundant at Stuttgart [1] (Hollister), and of frequent occurrence at Fayetteville and Clinton. Hanna found flickers common at Van Buren in December and took two specimens of this subspecies.

Red-shafted Flicker. *Colaptes cafer collaris.*

This is a western species breeding as far east as eastern Nebraska and western Texas. It occurs only casually in Arkansas, there being but one record—a typical specimen taken by Mr. G. Dallas Hanna at Van Buren, January 7, 1911. In habits this species closely resembles the eastern flicker.

Chuck-will's-widow. *Antrostomus carolinensis.*

This curious bird, resembling in appearance a large whippoorwill, is so retiring in its habits that it is rarely seen. It occurs commonly as a summer resident in many parts of the State, arriving from the South about the middle of April (Cerro Gordo, April 13, 1890; Helena, April 19, 1896), and departing in early fall. Although characteristic of the Lower Austral Zone, this species seems to be more abundant in the foothills than in the lowlands. It is reported as a summer resident at Newport and Helena, but I did not observe it in the lowlands. In the foothills near Delight it is common. On May 20, at dusk, the birds could be heard in every direction calling from the edges of the mixed upland timber. Three or four were heard on the lower slopes of Rich Mountain, where the upper limit of the bird was found to be about 1,800 feet. Although not seen in the higher parts of the Ozark region, it ranges up the valley of White River as far, at least, as Cotter. It was noted also at Mammoth Spring. Mr. C. E. Pleas, writing from Clinton, reports these birds abundant and says:

> Their favorite retreat here is open, sterile, rocky ground bordering the hillsides. * * * Of a hundred or more which I have traced up in the moonlight, every one was perched on the ground, a rock, or a log, or occasionally on a low limb or snag when singing.[2]

[1] Possibly including also some of the southern form.

[2] Oologist, VII, p. 156, 1890.

The food of this species, according to Bendire, consists mainly of beetles, winged ants, and other insects, especially the night-flying Lepidoptera. Strange as it may seem, it occasionally captures and swallows small birds.

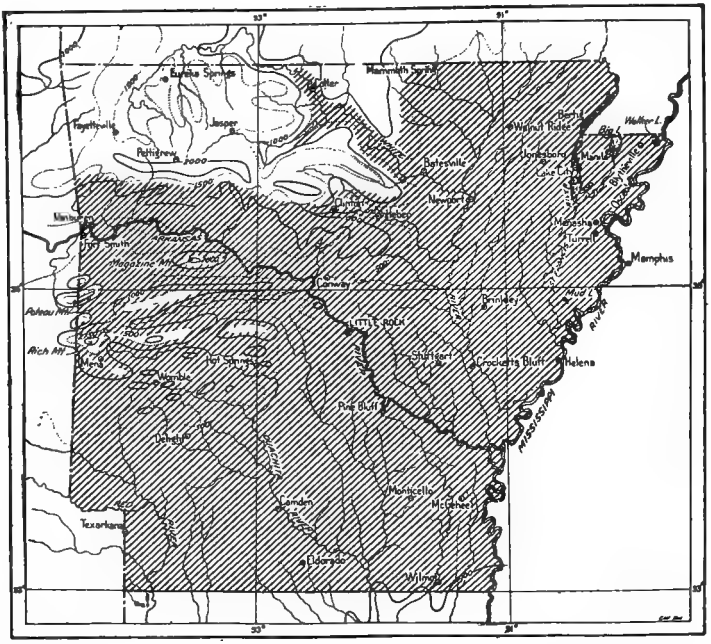

FIG. 1.—Breeding area of the chuck-will's-widow (*Antrostomus carolinensis*) in Arkansas.

Whippoorwill. *Antrostomus vociferus.*

The whippoorwill occurs as a summer resident in the more elevated portions of the Ozark region, where it often occupies the same localities as the chuck-will's-widow. It is recorded as abundant at Clinton, arriving there from the south March 31 and nesting in the rocky ravines of the mountains.[1] It is reported also as breeding at Pea Ridge, and I noted a few at Pettigrew about June 1, evidently on their breeding grounds. As a migrant it is reported from Helena, Newport, Monticello, and Delight, noted at the latter place March 31 and September 9 to 14. Like the preceding species, this bird is very retiring in its habits and is rarely seen, though its loud voice at night readily betrays its presence. The mistaken notion that this bird and the nighthawk are the same species is very prevalent. The whippoorwill is one of the most valuable of all our birds, being a great destroyer of moths, May beetles, caterpillars, and other harmful insects. It has been known to eat the potato beetle and also the Rocky Mountain locust.

[1] Pleas, C. E., Oologist, VII, pp. 155, 156, 1890.

THE GOATSUCKERS OF ARKANSAS. NIGHTHAWK, WHIPPOORWILL, AND CHUCK-WILLS-WIDOW.

Nighthawk. *Chordeiles virginianus virginanus.*

The nighthawk, or "bullbat," occurs as a common migrant and a rare and local summer resident. It arrives from the south about the 20th of April, and migrating individuals are more or less common for a month or more. In the fall the southward movement begins late in August and continues through September, the birds being most abundant during the latter month. The species is reported to breed at Clinton, Pea Ridge, and near Newport. I observed it in small numbers at Mena (May 24), Pettigrew (June 1), and Mammoth Spring (June 15). A flock of 10 seen at Womble, May 22, may have

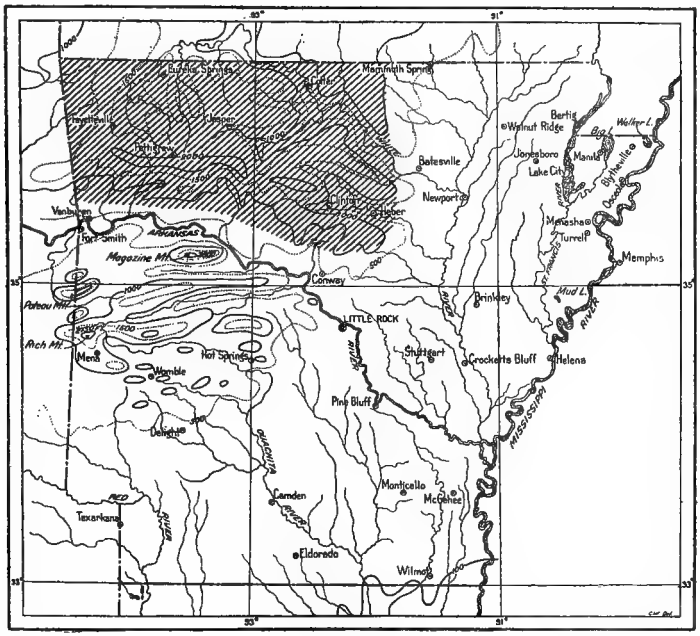

FIG. 2.—Breeding area of the whippoorwill (*Antrostomus vociferus*) in Arkansas.

been migrants. Preble found them common at Fort Smith on September 15 and noted them daily at Fayetteville from September 24 to October 1. Savage observed a few at Delight between August 26 and September 24. Nighthawks are strictly insectivorous and eminently beneficial. They are adepts at capturing insects on the wing, and their stomachs are often gorged with the fruits of their chase. Among other destructive species which they assist in keeping down is the cotton-boll weevil, a pest now rapidly spreading over Arkansas. Cotton growers in the State would do well to see that the law protecting this valuable bird is strictly enforced, more especially as in the fall many are shot by irresponsible boys and thoughtless hunters, to whom the temptation of a flying mark is irresistible.

Florida Nighthawk. *Chordeiles virginianus chapmani.*

The occurrence of this southern form of the nighthawk in Arkansas was unknown until I secured a typical specimen at Stuttgart, May 12, 1910. The subspecies probably breeds in favorable localities in the southern part of the State. It was observed in small numbers on the Grand Prairie around Stuttgart, and one was seen at Eldorado July 3.

Chimney Swift. *Chætura pelagica.*

This bird, commonly known as "chimney swallow," or "chimney sweep," is one of the most abundant species in the State and is found in practically all localities. From their winter home south of the United States the first ones arrive about the last of March (earliest at Helena, March 21; average, March 25) and remain until October (last seen at Helena, October 19).

As is well known, their ordinary breeding places are in unused chimneys, but in thinly settled districts a few may still retain their ancient habit of nesting in hollow trees. Pleas, in 1890, stated that such situations were used by the swifts at Clinton, Ark., and more recently Widmann has recorded their use of hollow tupelo gums in the swamps of southeastern Missouri.[1] In the fall, just prior to the southward migration, large numbers of swifts often gather into a flock and roost by thousands in some large chimney.

Ruby-throated Hummingbird. *Archilochus colubris.*

This tiny hummingbird is a common summer resident in most parts of Arkansas. The earliest date of its arrival at Helena is March 31 (average, April 9) and it remains until October (average, October 6; latest, October 8). At Delight it was seen as late as October 25. Hummingbirds readily adapt themselves to civilized surroundings and are often seen in town and city gardens, but are equally at home in the depths of the wilderness. I observed them frequently on Rich Mountain from base to summit and found them also in the timbered bottoms at Turrell and McGehee. They are reported as breeding at Pea Ridge, Clinton, Pettigrew, Mammoth Spring, Big Lake, and Delight.

Scissor-tailed Flycatcher. *Muscivora forficata.*

This handsome flycatcher is a summer resident of the prairies from Kansas to southern Texas. Its range extends east to eastern Oklahoma and casually to Arkansas. Bendire, in giving its distribution, says: "Occasional in * * * western Arkansas" and, although no definite locality is given, this statement doubtless refers to the region about Fort Smith, where Capt. Bendire was stationed in 1860. On May 28, 1910, I saw from the train one of these birds a little south of Spiro, Okla., about 10 miles west of the Arkansas boundary.

[1] Birds of Missouri, p. 132, 1907.

Kingbird. *Tyrannus tyrannus.*

The kingbird is a common and generally distributed summer resident, arriving in spring about April 15 and remaining until late September (last seen at Helena September 27). It is recorded as breeding at Clinton, Pea Ridge, and Big Lake, and I found it in the breeding season at Stuttgart, Mammoth Spring, Conway, Pettigrew, and Rich Mountain (2,600 feet). Its food consists almost wholly of insects, including many noxious species, supplemented by a small percentage of wild berries and fruits. It has been accused of preying extensively upon honeybees, but examination of 624 stomachs in the Biological Survey showed only 22 containing these insects, 61 in all, including 51 drones, 8 workers, and 2 indeterminate. It is evident, therefore, that the species as a whole is not greatly injurious to apiaries.

Crested Flycatcher. *Myiarchus crinitus.*

This large flycatcher occurs as a common summer resident in all parts of the State. The earliest arrivals in spring are noted at Helena April 12 (average, April 17), and the fall migration is performed chiefly in September. The species has been reported as breeding at Clinton, Newport, Helena, and Delight. I found it in the breeding season at Mammoth Spring, Stuttgart, Wilmot, Pettigrew, Conway, and Rich Mountain. At the latter place it was common everywhere on the mountain from base to summit. The food of this bird consists of beetles, locusts, crickets, ants, flies, moths, and other insects, with some wild fruit.

Phœbe. *Sayornis phœbe.*

The phœbe or "bridge pewee" is one of the commonest of the flycatchers in summer in the mountains and foothills, but is not found at that season in the lowlands. It has been recorded from Fayetteville, Pea Ridge, and Clinton. I found it at Pettigrew, Chester, Cotter, Mammoth Spring, and Rich Mountain, the latter point marking its southern limit as a breeder. The bird is common all over this mountain, and a nest with eggs was found May 27 at the summit. It is the hardiest member of the family and in winter occurs nearly throughout the State. The first migrants from the north were seen at Delight on October 11, and by October 27 the species was common. It has been recorded at Clinton and Helena in January.

The phœbe is one of our most useful birds, its food consisting mainly of insects, among them many noxious species, such as click beetles, May beetles, and weevils, including the boll weevil. Its nest is fixed on the side of a cliff, the rafters or abutments of a bridge, or under the eaves of a house or farm building.

[Say Phœbe. *Sayornis sayus.*

This is a western species, breeding east to western Texas and Kansas, and has occurred also as a straggler in Missouri, Wisconsin, and other eastern States. The only record for Arkansas is the very indefinite one given by Audubon, who includes the State in its range, without comment.[1]]

[1] Birds of Amer., I, p. 218, 1840.

Olive-sided Flycatcher. *Nuttallornis borealis.*

The olive-sided is one of the northern-breeding flycatchers, found in Arkansas only during migration. It passes north in May and south in September. A specimen was taken by Mr. W. G. Savage at Delight, September 12, 1910—the only record for the State.

Wood Pewee. *Myiochanes virens.*

The wood pewee is perhaps the best known of our flycatchers, and is generally distributed as a summer resident. Its favorite haunts are open woodlands and orchards, and in such situations its pleasing song may be heard throughout the heat of summer.

The first migrants reach Helena about the middle of April (earliest date, April 12) and remain till October (latest, October 12). The species is recorded as breeding at Mammoth Spring, Wilmot, Delight, Rich Mountain, Pettigrew, Clinton, Camden, and other places. Like the other flycatchers, it chooses as food mainly insects, including beetles, crane flies, dragon flies, ants, grasshoppers, tent caterpillars, and moths.

Yellow-bellied Flycatcher. *Empidonax flaviventris.*

This is one of the smaller flycatchers and so quiet and inconspicuous that it is rarely seen. It breeds in the northern States and Canada and passes south in winter to Central America. It may be found in Arkansas during May and again in September. Savage has taken two specimens at Delight, September 3 and 16, 1910, and these are the only records from the State.

Acadian Flycatcher. *Empidonax virescens.*

This retiring little bird is a lover of wooded ravines and bottom-land timber, occurring commonly as a summer resident. The first arrivals in spring reach Helena about April 23 (earliest record, April 20), and the last seen at Delight were noted September 12. The species is reported as nesting at Clinton and Helena, and I found it at nearly every locality visited, including Mammoth Spring, Cotter, Pettigrew, Chester, Rich Mountain, and Wilmot. At the latter place I found a nest, June 26, in a cypress tree growing in the edge of the lake near town; the parent birds were feeding young in the nest. This flycatcher feeds upon various insects, such as beetles, flies, and wasps, and occasionally eats wild berries.

Traill Flycatcher. *Empidonax traillii.*

This species is rather rare and of local distribution in Arkansas. It is an inhabitant of the prairies and open valleys, but is not found in heavy timber. On the Grand Prairie at Stuttgart I found it fairly common, living in orchards, dooryards, and about small clumps of trees on the prairie.[1] A specimen was taken there May 13 and

[1] This is the type region of *traillii*, Audubon having described the species in 1828 from a pair of birds which he collected on the "prairie lands of the Arkansas River."

another was secured at Chester, June 4, in a clump of bushes along a creek running through a cultivated field. The only other record for the State is furnished by Miss Cavaness, who reports the bird breeding at Monticello.

[**Least Flycatcher.** *Empidonax minimus.*

This little flycatcher, although difficult to distinguish by its colors from the Traill, is easily recognized by its abrupt call. It is a common and regular migrant in the Mississippi Valley, occurring in April and May and again in September and October. Further observations will undoubtedly reveal its presence as a bird of Arkansas.]

Prairie Horned Lark. *Otocoris alpestris praticola.*

The horned lark occurs as a migrant and winter visitant and locally as a breeder in the Ozark region. It has been found nesting at Helena only once, in May, 1911. Harvey reports it as "resident" at Fayetteville, and since it is known to occur in summer in several of the southern counties of Missouri [1] it will probably be found breeding in suitable localities in northern Arkansas. At Helena it is reported to occur in migration, and at Van Buren, December 28, 1910, Hanna saw a flock of 22, from which he collected 5 specimens. Horned larks are hardy birds, nesting in early spring often before the snows have melted. They are ground dwellers for the most part, but at mating time often indulge in a flight song after the manner of the famous skylark of Europe.

[**Magpie.** *Pica pica hudsonia.*

The only evidence of the occurrence of this western species in Arkansas is Audubon's inclusion of that State in his definition of the bird's range.[2] It may still occasionally wander into the western part of the State.]

Blue Jay. *Cyanocitta cristata.*

The blue jay is common throughout the State, occurring both in the lowlands and on the mountains. Although partially migratory in the northern part of its range, it is found in Arkansas during the entire year. Probably the native birds migrate to some extent, or at least wander rather widely in search of food, and in winter their numbers are increased by the arrival of migrants from the north. Blue jays are reported abundant in winter at Fayetteville, Van Buren, Clinton, Stuttgart, and Helena. They breed at all those places and have been noted also in summer at Lake City, McGehee, Wilmot, Rich Mountain, Pettigrew, and Mammoth Spring. The food of the jay is made up mainly of acorns and other nuts, with the addition of various insects, such as beetles, grasshoppers, and caterpillars, and a relatively small amount (about 19 per cent of the total) of grain, chiefly corn.

[1] Found by Mr. O. Widmann near West Plains, Howell County, and between Doniphan and Pleasant Grove, Ripley County. (Reported in a letter to the author.)

[2] Birds of America, IV, p. 103, 1856.

Raven. *Corvus corax sinuatus.*

Ravens formerly occurred rarely in the mountains of Arkansas and there may still be a few remaining in the wilder and more inaccessible parts. Pleas reported in 1890 that they bred on cliffs in the highest hills of Van Buren County, near Copeland, and Monroe reported them breeding in the region about Newport in 1884—probably in the hills to the westward.

Crow. *Corvus brachyrhynchos.*

Crows are generally distributed in the State in both summer and winter, but apparently are nowhere very abundant. They are reported to breed at Clinton (rare), Newport, Helena (rare), and Delight (uncommon). I noted them in small numbers at Cotter, Womble, Mena, Pettigrew, and Chester, and at Conway and Mammoth Spring they were fairly numerous. With the exception of 3 or 4 in the heron rookery at Walker Lake, none were seen in the bottom lands of eastern Arkansas. In winter the species is recorded as rare at Stuttgart, Clinton, Van Buren, Helena, and Fayetteville.

The crow subsists on a great variety of food. Careful study of its diet by the Biological Survey shows that about 26 per cent of its food consists of insects, mainly injurious species, about 21 per cent of corn, and the rest of various grains, nuts, seeds, etc.

Clarke Nutcracker. *Nucifraga columbiana.*

The only record of this bird's occurrence in Arkansas is given by Mr. Robert H. Mitchell, who states that a specimen was killed at Earl, Crittenden County, about April 1, 1891.[1] The species inhabits the mountains of the western United States, and is only a straggler east of Colorado and the Black Hills.

Bobolink. *Dolichonyx oryzivorus.*

The bobolink, or "ricebird," as it is called in the South, is an irregular migrant in the Mississippi Valley, and probably never is so abundant as on the Atlantic coast. Its summer home is on the prairies from northern Missouri northward and in the northeastern States. Migrating flocks have been observed at Helena, May 13, 1894, and April 20, 1904, and at Newport it was reported abundant in 1884 from May 7 to 19. At Stuttgart, May 11 to 14, 1910, I saw several hundred birds, mostly males, in flocks numbering 10 to 20. No records of its fall migration are at hand, but the species is known to leave Missouri the latter part of August and arrive in southern Louisiana between September 1 and 15. A decidedly useful bird in its northern home, the bobolink becomes a serious pest when it reaches the rice fields of the South Atlantic States. It may prove injurious

[1] Auk, XI, p. 327, 1894.

to the rice industry of Arkansas, but on account of the comparatively small number of these birds which migrate through the Mississippi Valley the damage done by them will be much less severe than on the Atlantic coast.

Cowbird. *Molothrus ater.*

The cowbird occurs locally in moderate numbers over most of the State. It has been reported as a breeder at Clinton, Newport, Big Lake, and Delight, and I found it in the breeding season at Stuttgart, McGehee, Wilmot, Camden, Gurdon, Mena, Pettigrew, and Mammoth Spring. At McGehee it was fairly numerous in the clearings and more open timber, and one of its eggs was found, May 16, in a yellow-breasted chat's nest. There is only one report of its occurrence in the State in winter—at Helena—but doubtless it will be found to be plentiful at that season. At Stuttgart I was told that this species joins other blackbirds in depredations on rice, but up to date no serious damage to this newly established industry has been reported. The food of the cowbird consists largely of weed seed, with the addition of grain and insects in about equal proportions. It has been found to capture limited numbers of boll weevils.

Yellow-headed Blackbird. *Xanthocephalus xanthocephalus.*

This western species probably occurs occasionally in western Arkansas, since it is known to breed as near the State as Jasper County, Mo. The only record seems to be that given by Cabot, of a specimen said to have been taken in Arkansas by Maj. Townsend and donated to the Boston Society of Natural History.[1]

Red-winged Blackbird. *Agelaius phœniceus phœniceus.*

The redwing is an abundant resident in many sections of the State, particularly on the prairies and throughout the marshy areas of the eastern part. It is known to breed at Lake City, Stuttgart, Mammoth Spring, Helena, Wilmot, and Chester. It was abundant on the prairie at Stuttgart and several nests were found, May 12, containing one to four eggs. In that locality, blackbirds were reported to do some damage to sprouting rice, and probably this species is largely responsible for the depredations. In winter also the redwing is abundant in the State, as indicated by reports from Fayetteville (Harvey), Van Buren (Hanna), and Stuttgart (Hollister). Its food consists largely of weed seed, with a small amount of grain (oats, corn, and wheat) and a fair proportion (about 25 per cent) of insects, among which a few boll weevils have been found.

Thick-billed Redwing. *Agelaius phœniceus fortis.*

This northwestern form of the red-winged blackbird occurs in Arkansas only as a migrant and winter visitant, and it is probably rather rare. Only one record is known—that of a bird taken by Mr. G. Dallas Hanna at Van Buren, December 10, 1910.

[1] Proc. Boston Soc. Nat. Hist., II, p. 259, 1847.

Northern Redwing. *Agelaius phœniceus arctolegus.*

Like the preceding, this subspecies is a winter visitor in the State, known thus far only from 5 specimens taken by Hanna at Van Buren, December 10 and 17, 1910.

Meadowlark. *Sturnella magna magna.*

The meadowlark or "field lark," as it is often called, is a locally common resident in the State, but is rare or absent from mountainous and heavily timbered areas.

The northern form (*magna*) is not known to breed within our limits, but when summer specimens are secured from the Ozark region, they may prove to be of this subspecies. It is reported as occurring in mild winters at Fayetteville (Harvey), and Hanna collected two specimens from a flock of 35 at Van Buren on December 17. This is a highly beneficial species, its food consisting mainly of injurious insects, with a small percentage of seeds and some grain, mostly waste corn picked up about the fields in winter and early spring. It has been shown to be an important enemy of the cotton-boll weevil, and for this reason, if for no other, should be carefully protected.

Southern Meadowlark. *Sturnella magna argutula.*

The southern form of the meadowlark occurs as a summer resident in favorable situations over the greater part of the State, exclusive of the Ozark region. Specimens taken in summer have been examined from Blytheville, Stuttgart, Conway, and near Mammoth Spring, and the bird is reported to breed also at Newport and Helena. I found it abundant on the prairie at Stuttgart and in old fields at Wilmot, and fairly common at McGehee, but it is apparently very scarce in the southwestern part of the State. Savage reports it absent in summer at Delight, but appearing there in migration September 29 and becoming common by the middle of October. Some of these migrants, however, may be the northern form (*magna*). Both forms probably occur together in winter throughout the lowlands of the State. The species is reported abundant at that season at Stuttgart (Hollister) and Judsonia.[1]

[Western Meadowlark. *Sturnella neglecta.*

Since the breeding range of the western meadowlark overlaps that of the eastern species in western Missouri (Johnson and Vernon Counties), the bird may be looked for as a migrant and possibly as a breeder in extreme western Arkansas. Although difficult to distinguish by its markings, the western bird is easily recognized by its striking song.]

Orchard Oriole. *Icterus spurius.*

The orchard oriole is a common summer resident in most parts of Arkansas. The average date of its arrival at Helena in spring is April 10 (earliest date March 30). It departs early, usually in late August or early September. It has been reported from Newport,

[1] Reynolds, Am. Nat., XI, p. 307, 1877.

Clinton, and Delight, and I found it fairly common at Stuttgart, Conway, Mammoth Spring, Camden, and Wilmot. At the latter place, young just out of the nest were observed June 24. The species seems to be rather rare in the mountainous sections of the State. I noticed only one bird at Mena, and there are no records for the Ozark region except at Clinton, where it is reported rare. Orioles are mainly insectivorous in their diet, and among the good qualities of these very useful birds is their pronounced liking for boll weevils. Investigations in the cotton fields of Texas and Louisiana showed that nearly one-third of the stomachs of this species collected there contained remains of this pest.

Baltimore Oriole. *Icterus galbula.*

This handsome oriole is fairly common locally in summer, mainly in the eastern part of the State. It is reported common at Helena, where it arrives from the south about April 10 (earliest date, April 4). At Clinton it is given as a rare breeder, at Hopefield as tolerably common,[1] and it is reported as breeding at Newport, Big Lake, and Pea Ridge. I found the species at Stuttgart (May 14), Mammoth Spring (June 15), and a few other places in the eastern part of the State, but nowhere was it common. At Delight it is a rare migrant, first seen in autumn on September 1. The food of this oriole consists mainly of insects, and caterpillars form a large part. Like the other orioles, it is an important enemy of the boll weevil. A little fruit is included in its diet, but not enough to counterbalance its usefulness as an insect-destroyer.

Rusty Blackbird. *Euphagus carolinus.*

The rusty blackbird is a northern-breeding species and occurs only in migration and as a winter resident. Hollister reports it common near Stuttgart in winter, and Pleas gives it as a migrant at Clinton, seen November 5, 1889. Hanna noted a flock of 10 at Van Buren on December 17 and collected several specimens on that date and 1 on January 7. This blackbird forages mainly in pastures and swamps, where it destroys many noxious insects. In winter it eats some grain, most of which is probably waste picked up in the fields.

Brewer Blackbird. *Euphagus cyanocephalus.*

This blackbird is the western representative of the rusty and ranges east in winter casually to Arkansas and Louisiana. Hollister reports a few seen in winter on the prairie at Stuttgart in company with rusty blackbirds.[2] Savage noted a flock of 13 at Delight November 17, and 2 birds on January 5.

[1] Hay, O. P., Bull. Nutt. Orn. Club, VII, p. 92, 1882.
[2] Wilson Bull., IX, p. 14, 1902.

Bronzed Grackle. *Quiscalus quiscula æneus.*

The crow blackbird, as this species is often called, is common over a large part of the State, particularly in the bottom lands of the eastern half and in certain valleys of the western part. None were seen in the mountains proper. It is reported as breeding at Clinton, Newport, Helena, and Hopefield, and was noted as common at Fayetteville in March and September (probably breeding). Several flocks were seen at Van Buren in December (Hanna) and a large flock at Delight on February 2 (Savage, 1911). I found it common and breeding at Mammoth Spring, Lake City, Turrell, Conway, and Wilmot. McAtee found it abundant at Big Lake June 20 to 23, 1911. The adults were feeding well-grown young and were alert in seizing minnows which sprang upon the banks to escape larger fishes. At Helena it is common both summer and winter, and after the breeding season large flocks are often seen flying to and from their roosts. The diet of this bird includes both animal matter (insects) and vegetable matter in the proportion of about 30 per cent of the former to 70 per cent of the latter. The vegetable matter consists mainly of corn, with a little other grain and considerable mast. A good share of the corn is waste picked up in the fields, but the grackles are sometimes destructive to corn in the ear. Among the insects eaten are grasshoppers and various beetles, including the boll weevil.

English Sparrow. *Passer domesticus.*

The English sparrow is said to have been introduced at Hot Springs between 1876 and 1880, but prior to this (in 1871) it had been introduced into Memphis, Tenn., and doubtless spread first into Arkansas from that point, so that by the end of the year 1886 it had established itself over a considerable area in the northeastern part of the State, with a few isolated colonies in the western part. Here, as everywhere in America, it has increased with amazing rapidity and is now found in practically every town and village in the State, as well as on a great majority of the farms. Almost everywhere it is regarded as a pest by reason of its destruction of grain, fruit, and garden vegetables, its defacement of public buildings and of dwelling houses, and its habit of driving away native birds. At times it feeds to some extent on insects, but its destruction of them compensates to only a slight degree for the damage it does, and hence its destruction is advocated in a circular issued by the Biological Survey describing the best methods of ridding localities of this feathered nuisance.

Purple Finch. *Carpodacus purpureus.*

The purple finch is a regular and not uncommon migrant and winter resident. In 1910 the first flock, numbering about 20, arrived at Delight November 10 and in a few days the species became common, remaining so all winter. It has been reported at Helena at various

dates between January 21 and April 23 and is given as a winter visitant at Clinton. Hanna collected 6 specimens at Van Buren between November 29 and December 22. Purple finches are usually found in flocks during the winter season, when they feed largely on the buds and seeds of various trees.

Crossbill. *Loxia curvirostra minor.*

The red crossbill is a rare and irregular visitant in Arkansas. It has twice been reported from Clinton—April 6, 1889 (in numbers), and May 5, 1890 (one), these being the only records from the State.

Goldfinch. *Astragalinus tristis.*

The goldfinch, often called "wild canary" or "thistle bird," is an abundant winter resident in all parts of the State and a fairly common summer resident in the north central and northwestern counties, south in the mountains to Polk and Montgomery Counties. It is reported as breeding at Clinton, and I found it at Womble (May 22), Rich Mountain (May 25–28), Pettigrew (May 30), Chester (June 4), and Hoxie (June 22). It was noted by Preble as common at Fayetteville in September. Savage reports a flock of 20 seen at Delight November 19, and Hanna found it numerous at Van Buren between November 30 and December 17. Mrs. Stephenson reports its occurrence at Helena between September 8 and May 1, and states that immense flocks are often seen there during April and May and in November. In winter the goldfinch feeds largely on weed seeds, the seeds of birches, and those of the buttonbush. In summer it subsists to a large extent on weed seed, but destroys many noxious insects, such as cankerworms, plant lice, small grasshoppers, and beetles (Forbush).

[**Pine Siskin.** *Spinus pinus.*

The siskin occurs in winter over most of the United States, and may therefore be looked for at that season in Arkansas. It was rather common in Shannon and Grandin Counties, Mo., in April and May, 1907.[1]]

Lapland Longspur. *Calcarius lapponicus.*

This Arctic-breeding bird is a common winter resident in the Mississippi Valley as far south as Arkansas and Texas. Mr. Howard Ayers, writing from Fort Smith in 1879, states: "They [the longspurs] appear in this part of the State about November in small flocks, but as it grows cold they collect in immense numbers and scatter again as spring comes (about 1st of February)."[2] The species is reported also as a rare visitor at Clinton, where it was seen October 13, 1889, and February 4 and April 30, 1890. During the winter of 1882–1883 it was abundant at Fayetteville.[3]

[1] Widmann, O., Birds of Missouri, p. 171, 1907.
[2] Coues, Bull. Nutt. Orn. Club, IV, p. 238, 1879.
[3] Cooke, W. W., Orn. and Ool., VIII, p. 34, 1883.

Smith Longspur. *Calcarius pictus.*

This species breeds on the Barren Grounds of Canada and passes the winter on the prairies of the Mississippi Valley. There is only one record of its occurrence in Arkansas—a specimen collected by Prof. Harvey at Fayetteville February 28, 1885,[1] but the species is undoubtedly more common in the State than the scarcity of records indicates.

Vesper Sparrow. *Poœcetes gramineus.*

The vesper sparrow or grass finch occurs commonly in the lower Mississippi Valley as a migrant and winter resident. Savage noted its arrival at Delight October 25, and by November 4 it had become common and remained so until about April 1. It has been reported as a migrant at Clinton and as a breeder at Newport,[2] but the latter record is doubtless an error, since it is not known to breed south of St. Clair County, Mo. It is a ground-feeding bird, easily recognized in flight by the white outer tail feathers.

Savannah Sparrow. *Passerculus sandwichensis savanna.*

This little grass sparrow is a common migrant in both spring and fall, and many remain in the State all winter. The fall migration is performed mainly in October and November. The first birds arrived from the north at Delight October 5, and by November 10 they had become common, remaining until the middle of May. I saw 20 or more at Lake City April 29 and 30 and found them common on the prairie and along roadsides near Stuttgart May 11 to 14. A belated migrant was seen at McGehee May 17. The Savannah is one of the most useful of the sparrows. Nearly half its food consists of insects, beetles being most eagerly sought, and in winter it consumes large quantities of grass seeds and weed seeds. Individuals taken in cotton fields in winter were found to have eaten a number of boll weevils.

Grasshopper Sparrow. *Ammodramus savannarum australis.*

The grasshopper sparrow, so called because of its insectlike song, occurs probably as a rare or local summer resident, but on account of its retiring habits its presence is not easily detected. It is a dweller in grass fields and rarely seeks a higher perch than a fence or a weed stalk. It is recorded as a breeder at Newport, and will doubtless be found also at various points in the State in winter as well as in summer.

[Henslow Sparrow. *Passerherbulus henslowi.*

This is another of the small ground-dwelling sparrows whose shyness causes it to be easily overlooked. It lives in old fields and marshes and sings its odd little song on some weed stalk. The species is a locally common summer resident in Missouri, and will probably be found breeding in suitable situations in Arkansas.]

[1] Cooke, W. W., Bull. 2, Div. Econ. Orn., p. 186, 1888. [2] Ibid., p. 188.

Leconte Sparrow. *Passerherbulus lecontei.*

This species probably occurs quite regularly as a migrant and winter resident, but, like the other ground-dwelling sparrows, its presence in a locality is often unsuspected. One specimen was taken at Fayetteville by Prof. Harvey February 28, 1885,[1] and 2 at Van Buren by Mr. G. Dallas Hanna January 7, 1911. About 8 were seen on the latter date in a pasture where the grass was half knee high.

Nelson Sparrow. *Passerherbulus nelsoni.*

This sparrow breeds in Canada and the Dakotas and migrates through the Mississippi Valley in spring and fall. It is a marsh-dwelling bird and even in migration resorts to wet meadows. I saw one on the prairie near Stuttgart May 14 and several in the valley at Mena May 24, when I secured a specimen. These are the only records from the State.

Lark Sparrow. *Chondestes grammacus.*

Although occurring in various parts of the State, this species can not be called common as a summer resident except in a few localities, but as a migrant it may at times be plentiful. Its winter home is mainly south of the United States. It is reported as a common breeder at Delight, Pike County, arriving from the south April 8 and leaving by September 17. I found it fairly common at Mammoth Spring in June and noted it in small numbers at Lake City (May 1—probably migrants), Conway, Camden, and Eldorado. At Helena it is rare, and Mrs. Stephenson has noted it only twice, April 14, 1904, and April 23, 1905. It was seen at Clinton, April 23, 1890. The food of this sparrow is made up of seeds of weeds, grasses, and grain, with about 27 per cent of insects. It is considered to be one of the most valuable of the sparrows as a destroyer of grasshoppers.

Harris Sparrow. *Zonotrichia querula.*

This sparrow is a common migrant in western Missouri, eastern Kansas, and Oklahoma, and probably occurs regularly in western Arkansas. The only record from the State, however, is that furnished by Mr. G. Dallas Hanna, who collected a specimen at Van Buren on January 7, 1911.

White-crowned Sparrow. *Zonotrichia leucophrys leucophrys.*

The whitecrown is an abundant migrant and an uncommon winter resident. Migrants reach the State in the fall from their northern home about the last of October, and in spring the migratory movements extend from March to the middle of May.

[1] Cooke, W. W., Bull. 2, Div. Econ. Orn., p. 191, 1888.

Hollister found a few of these sparrows at Stuttgart in January, Hanna noted them in small numbers at Van Buren in December, and Pleas reported them as occasionally wintering at Clinton. Mrs. Stephenson has observed them at Helena between April 17 and May 7, and Savage reports them common at Delight between April 2 and May 18. I saw 2 at Stuttgart May 13, and 1 at McGehee May 17.

Gambel Sparrow. *Zonotrichia leucophrys gambeli.*

This western form of the white-crowned sparrow occurs rarely in migration as far east as Arkansas. Three specimens taken by Mr. G. Dallas Hanna at Van Buren on December 14, 16, and 22, 1910, furnish the only records for the State.

White-throated Sparrow. *Zonotrichia albicollis.*

The whitethroat occurs in great abundance as a migrant and winter resident. It arrives in the vicinity of Helena about October 10 and remains until the middle of May (latest date, May 19). Savage noted it at Delight in spring as late as May 16, and I found it numerous at Turrell between May 6 and 10. The first fall migrants reached Delight October 23, becoming common by November 5. Hanna found the whitethroat the most abundant species at Van Buren during December. Like many of the members of its family, this sparrow is a great destroyer of weed seed and has an especial fondness for the seeds of ragweed and bindweed (*Polygonum*). It consumes, also, a great many wild berries and a goodly number of insects. Its food habits in general place it among the useful birds of the farm.

Tree Sparrow. *Spizella monticola.*

This hardy little bird breeds in the far north and spends the winter in the northern United States and as far south as Oklahoma. Its status in Arkansas is not well known, since it has been observed at only one locality—Helena, October 25, 1895, and October 30, 31, 1896. Prof. Cooke found these sparrows abundant at Caddo, Okla., between October 31 and February 26, a few remaining until March 10,[1] and they may be expected to occur in Arkansas at about the same dates.

Chipping Sparrow. *Spizella passerina.*

The "chippy" is one of our most abundant and familiar sparrows. It is found in all sections of the State, having been observed at Lake City, Turrell, Wilmot, Mena, Pettigrew, Conway, and other places. It arrives from the south early in March (earliest record at Helena, March 5) and remains until November (latest at Helena, November 6). Occasionally a few may be found in winter, as at Delight, where Savage took a single specimen on December 20. This little bird

[1] Bull. 2, Div. Econ. Orn., p. 198, 1888.

A WINTER SEED-EATER. THE WHITE-THROATED SPARROW.

often makes its home in dooryards and village gardens, and renders good service to man by destroying great quantities of weed seed (notably crab grass) and of noxious insects, which constitute about one-fourth of its food.

[**Clay-colored Sparrow.** *Spizella pallida.*

This little sparrow, which closely resembles the chipping sparrow, occurs commonly in migration in the Mississippi Valley, breeding from Nebraska northward. It passes through Missouri in April and May and again in September and October, and should be found also in Arkansas during those months.]

Field Sparrow. *Spizella pusilla pusilla.*

The field sparrow occurs as an abundant migrant and winter resident, but is found in the breeding season mainly in the northern and northwestern parts of the State. It is reported as breeding at Clinton, and I found it fairly common at Pettigrew and at Hoxie. Two birds heard singing at Stuttgart May 14 were probably breeders, but the species is very rare in summer so far south. During the summer of 1910 Mrs. Stephenson heard it singing constantly at Helena as late as July 24, but that is the first year in which it had been seen there in the breeding season. Hollister reports it very abundant at Stuttgart in November, and Hanna found it common at Van Buren in December. Mrs. Stephenson heard the first song of this species at Helena March 23, and the last migrants in spring leave there by April 21. At Delight the last spring migrant was seen on April 10 and the first fall migrant October 10, the species becoming common November 4.

Western Field Sparrow. *Spizella pusilla arenacea.*

This subspecies may be expected to occur casually during migrations and in winter. The only record is furnished by Mr. G. Dallas Hanna, who collected 2 specimens at Van Buren on January 7, 1911.

Slate-colored Junco. *Junco hyemalis.*

The junco, or "snowbird," is a common winter resident, arriving from the north about the last of October (earliest date at Helena, October 24) and remaining until the middle of April (latest date April 22). It is reported abundant at Stuttgart in November and January (Hollister), at Van Buren in December (Hanna), and common at Fayetteville on February 27 (Harvey). At Delight the species arrived about November 1 and departed northward by April 6. The food of this bird during its stay in the south is almost wholly composed of the seeds of various weeds and grasses.

Bachman Sparrow. *Peucæa æstivalis bachmani.*

This sparrow is a rather rare and local summer resident, usually found in old pastures. I secured a single specimen at Conway on June 7 and another (a singing male) at Camden on July 7. At

Hoxie, on June 22, in a pasture dotted with a few clumps of trees, I saw 4 or 5 of the birds, most of them singing. Savage observed 2 individuals at Delight on September 1.

Song Sparrow. *Melospiza melodia.*

The familiar song sparrow of the Northern States is found in Arkansas only as a migrant and winter resident. The fall movement brings it to the State in late October, where it remains until March or April. At Delight the first migrants in fall were noted November 10. It was reported as abundant in November and January at Stuttgart (Hollister) and at Van Buren in December (Hanna). Harvey noted it at Fayetteville February 28. At Helena it is recorded as a migrant only, though doubtless occurring there all winter. Like the other sparrows, it eats mainly seeds of weeds and grasses and a fair proportion of insects.

Lincoln Sparrow. *Melospiza lincolni.*

This sparrow is a common migrant in the Mississippi Valley and a winter resident in the southern part. Although it has been observed in Arkansas only a few times, it probably occurs regularly in moderate numbers. At Stuttgart, on May 12 and 13, I shot 2 specimens and saw several more. Hanna noted the species at Van Buren in small numbers between November 29 and December 22 and secured 6 specimens.

Swamp Sparrow. *Melospiza georgiana.*

The swamp sparrow breeds from northern Missouri northward and winters in the southern half of the United States. As its name indicates, it is an inhabitant of swamps, but in winter is often found in brushy fields. Its northward migration is performed in March and April; the southward movement in October. The species was observed by Savage at Delight between April 20 and May 6, and I saw a few at Lake City April 28 and 29. It is reported common in winter at Fayetteville (Harvey) and at Van Buren, where Hanna secured 8 specimens in December.

Fox Sparrow. *Passerella iliaca.*

This large and handsome sparrow occurs commonly as a migrant and winter resident. Mrs. Stephenson has noted it at Helena between November 4 and February 18, but considers it of rare and irregular occurrence. It is reported also as wintering at Clinton and Delight, and Hanna found it common at Van Buren in December. In northward migration it should be found during March and April.

Towhee. *Pipilo erythrophthalmus.*

The towhee or chewink, one of the largest of the sparrow family, occurs as a common migrant and winter resident, but in the breeding season is restricted mainly to the Ozark region. It is reported

as breeding at Clinton (rare) and near Newport. I found it fairly common at Pettigrew, but did not observe any in the mountains south of the Arkansas River. It has been noted in migration at Lake City, Helena, Hardy, Benton, and Turrell. At Delight the first fall migrant was seen October 8. In winter it has been recorded as common at Fayetteville [1] and at Stuttgart (Hollister). At Van Buren, on December 28, 8 birds were seen and one secured by Hanna. This bird is a ground dweller and seeks its food mainly by scratching among fallen leaves and rubbish in the woods or thickets. It destroys beetles and their larvæ, ants, moths, caterpillars, grasshoppers, flies, and earthworms; it takes also a considerable amount of weed seed and some wild fruits and berries.

Cardinal Grosbeak. *Cardinalis cardinalis.*

The cardinal, or redbird, as it is often called, is one of the commonest and most widely distributed birds of the State. It is most abundant, however, in the river-bottom thickets and in the lowlands generally. I observed none on Rich Mountain and only a few in the hills around Pettigrew, but at all other places visited it was very common.

The species is nonmigratory and is fully as abundant in winter as in summer. It has been recorded from a large number of localities in the State, including the following: Fayetteville, Van Buren, Mena, Camden, Wilmot, Stuttgart, Conway, Lake City, and Mammoth Spring. The food of the cardinal consists of weed seeds, seeds of wild fruits, and various insects, the latter forming about one-third of the total. The insects eaten include a number of serious pests, such as the Rocky Mountain locust, Colorado potato beetle, cotton-leaf worm, bollworm, boll weevil, and codling moth.

Rose-breasted Grosbeak. *Zamelodia ludoviciana.*

This grosbeak, as far as our records show, occurs only as a migrant, but since it has been found breeding as far south as Lawrence County, Mo.,[2] it may yet be discovered in Arkansas in summer. The bird has been noted by Mrs. Stephenson at Helena between April 27 and May 10, but is considered rare in that locality. Six individuals were seen at Clinton May 3, 1890. In the fall it may be looked for in September and October.

Blue Grosbeak. *Guiraca cærulea.*

The blue grosbeak is a fairly common summer resident in southern and southwestern Missouri as well as in Texas and Oklahoma. We should therefore expect to find it more or less common in Arkansas, but I did not observe the bird at any point visited, except at Mam-

[1] Cooke, Orn. and Ool., VIII, p. 34, 1883.
[2] Widmann, O., Birds of Missouri, p. 195, 1907.

moth Spring, where I saw one male on June 15 as I was driving over the hills. I had a near view of his distinctive colors, but did not secure the specimen. The species arrives from the south in late April and remains until October.

Indigo Bunting. *Passerina cyanea.*

The indigo bird is an abundant summer resident in all parts of the State. The first migrants from the south arrive about the middle of April (earliest date at Helena, April 17) and by the 1st of May the species is common. On the lowlands at Lake City and near Blytheville I found it very common from April 30 to May 3. The southward movement takes place in September and early October, and the winter is passed in Mexico and Central America. The last one seen at Delight was noted October 10. The species has been observed at Clinton, Pettigrew, Rich Mountain, Wilmot, Big Lake, Stuttgart, Conway, and Mammoth Spring. The indigo eats mainly weed seeds and various insects, and is said to be especially fond of grasshoppers and caterpillars.

Painted Bunting. *Passerina ciris.*

This beautiful little sparrow—the most brilliantly marked member of its family—is a rather uncommon summer resident, occurring most plentifully in the lowlands of the southeastern part of the State. At Helena it breeds regularly in moderate numbers, arriving from the south about the middle of April (earliest date, April 10). I saw a pair at McGehee May 17, and found several breeding pairs at Wilmot in June. Young just out of the nest were seen at the latter place June 24. This species has been observed at Eureka Springs by Philo W. Smith, jr.—probably a casual occurrence.[1]

Dickcissel. *Spiza americana.*

The dickcissel, or black-throated bunting, is a locally common summer resident in the State. Having a marked preference for level grass fields, it is infrequently found in hilly regions, but is abundant on the prairies, as at Stuttgart, where I observed the birds, May 11 to 14, singing with characteristic vehemence from fences, bushes, and weed stalks. In the heavily timbered bottom lands along the Mississippi it is rare, even as a migrant, and probably never breeds there, unless it be in open, long-cultivated areas. It has been observed but once by Mrs. Stephenson at Helena—May 4, 1902. Numbers arrived at Newport, April 27, 1884,[2] and on April 30, 1910, I observed a single migrant at Lake City. One bird was observed also at Fort Smith May 29, and one at Camden July 6. The fall migration takes place mainly in September, and before cold weather

[1] Widmann, O., Birds of Missouri, p. 198, 1907.
[2] Cooke, W. W., Bull. 2, Div. Econ. Orn., p. 221, 1888.

all have passed on to their winter home in South America. The dickcissel is a most useful bird on the farm, destroying large numbers of grasshoppers, crickets, and other injurious insects. About one-third of its food in summer consists of seeds, including a little grain.

Scarlet Tanager. *Piranga erythromelas.*

This brilliant tanager occurs as a summer resident in the northern and western parts of Arkansas as far south as Faulkner County and the Ouachita Mountains. The first migrants from the south arrive at Helena about April 10 and in the fall the species departs in September and October. The first birds from farther north reached

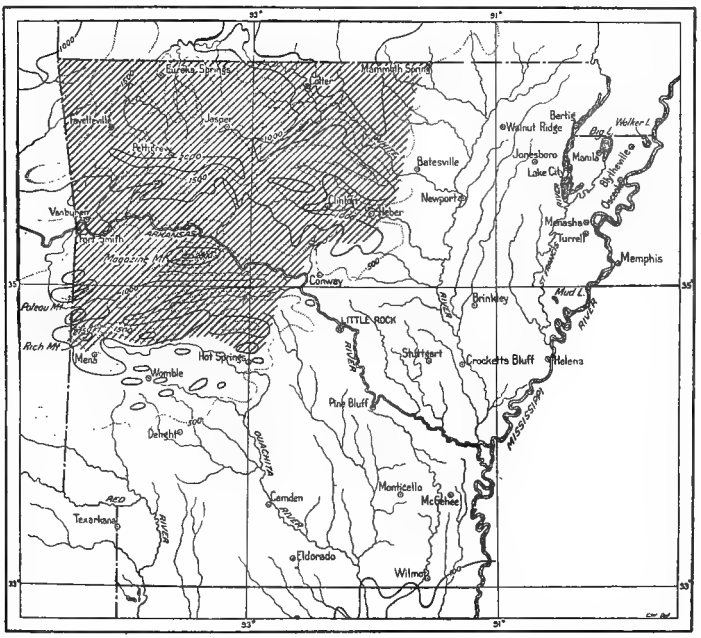

FIG. 3.—Breeding area of the scarlet tanager (*Piranga erythromelas*) in Arkansas.

Delight on September 17. The species is recorded as breeding at Heber,[1] Eureka Springs, and Clinton, and I found it in summer at Mammoth Spring, Conway (one June 6), Chester, Pettigrew (common), and Rich Mountain (common). The last locality apparently marks its southern limit as a breeder in the State. One male seen at McGehee May 17 was probably a belated migrant. Scarlet tanagers are lovers of oak woods, where they render valuable service in the destruction of caterpillars, moths, and beetles.

Summer Tanager. *Piranga rubra.*

The summer tanager is a common summer resident over the greater part of the State, except on the higher mountains. It usually arrives at Helena during the second week in April (earliest date,

[1] Widmann, O., Birds of Missouri, p. 199, 1907.

April 7) and departs in early October (latest date, October 2). At Delight it was noted as late as October 13. It is reported as a common breeder at Clinton, Newport, and Delight. I found it in every locality visited, except on Rich Mountain, including the following: Mammoth Spring, Conway, Wilmot, Camden, Womble, Mena, Pettigrew (in valleys), and Cotter.

This tanager has received the name of "bee bird" on account of its habit of feeding on honeybees. Its food during the spring and early summer is said to consist chiefly of various kinds of large coleopterous insects, bees, wasps, and others. Later in the season it feeds chiefly on blueberries and other small fruits.[1]

Purple Martin. *Progne subis.*

The familiar martin is a common and generally distributed summer resident. Although formerly nesting in hollow trees and reported as doing so as late as 1889 (at Clinton), its present abundance in a given locality is largely dependent on the number of boxes put up for its accommodation. From its winter home in South America the martin arrives in Arkansas usually about the first week in March (earliest record at Helena, February 18, 1897), but does not become common until late in March or early in April. By April 10, at Helena, it has usually begun to nest. Fall migration takes place early, most of the birds leaving the United States in late August and early September. This species has been reported as breeding at Fayetteville, Pea Ridge, Clinton, Newport, Helena, and Delight. I found it at Mammoth Spring, Lake City, Turrell, Stuttgart, McGehee, Wilmot, Eldorado, Camden, Womble, Mena, Conway, Cotter, and Pettigrew. At the last-mentioned place a few pairs were found breeding on the top of a mountain at about 2,200 feet altitude. Martins are strictly insectivorous and have been found to capture boll weevils. Farmers should make special efforts to increase their numbers around the farm.

Cliff Swallow. *Petrochelidon lunifrons.*

The cliff swallow is a common migrant in the Mississippi Valley and breeds in the northern part as far south as central Arkansas. The species is an irregular migrant, but may be expected in spring between the first week in April and the middle of May, and is usually again common in late August and September. At Stuttgart, May 12 and 13, 1910, I noted several small flocks of these birds. As a breeder it is rare and local, the only reports being from Clinton and Pea Ridge. During its southward migration in September this species feeds extensively upon the boll weevil, and when that insect is abundant it forms the principal food of this swallow. Of 35 specimens collected in the Texas cotton fields, all but one had eaten boll weevils, the total number destroyed by the 34 birds being 638.

[1] Baird, Brewer, and Ridgway, Hist. N. Am. Birds, I, p. 443, 1874.

Barn Swallow. *Hirundo erythrogastra.*

The barn swallow is a common migrant in Arkansas, but occurs in the breeding season only rarely and locally. Spring migration occurs from about the first of April to the middle of May and the fall movement takes place chiefly during August and September. I noted the species in small numbers in migration at Turrell May 9, Stuttgart May 12 to 14, and Arkansas City May 15. Preble saw one at Fayetteville September 23. The only report of its breeding in the State is at Clinton, in 1890. Like the cliff swallow, this swallow has been found to be very useful in destroying boll weevils in fall. Of 14 birds collected in Texas in September, 5 had eaten a total of 52 weevils.

Tree Swallow. *Iridoprocne bicolor.*

This species is a common migrant in the Mississippi Valley, passing northward at intervals during March, April, and early May, and southward in late September and October. On the St. Francis River, north of Bertig, I saw a flock of about 50 of these swallows April 30, 1909, and the next day at Kennett, Mo., saw a flock of more than a thousand feeding over fields near the river. Preble found the species common at Fort Smith between September 15 and 23 (1892). Widmann records it as a rare summer resident as far south in Missouri as the southern border of Dunklin County. Mr. Widmann writes me that in May, 1894, he found a nest with eggs in a stump in the middle of the St. Francis River, about a mile south of Bertig. The bird probably occurs occasionally, therefore, as a breeder in the Sunken Lands of northeastern Arkansas.

Bank Swallow. *Riparia riparia.*

The bank swallow is an abundant migrant and a locally common summer resident. It is with some difficulty distinguished in flight from the rough-winged swallow, which often nests in banks but never in large colonies as does the bank swallow. The present species breeds commonly at Helena. In some seasons as many as 300 nest holes have been observed there by Mrs. Stephenson. The birds arrive usually about the first of April (earliest date, March 26) and depart during August and September.

This swallow is reported, also, to breed along the Mississippi in the vicinity of Hopefield.[1] There are no other positive breeding records for the State, and I failed to find the species during my 1910 trip. Like the other members of its family, it feeds upon various winged insects, including the boll weevil.

Rough-winged Swallow. *Stelgidopteryx serripennis.*

The roughwing occurs as a fairly common migrant and summer resident. It nests both in cut banks and in cliffs, usually only a few pairs in a locality. Migrants from the south arrive at Helena about

[1] Hay, O. P., Bull. Nuttall Ornith. Club, VII, p. 91, 1882.

March 23 (earliest record, March 21) and are last seen there about September 21. I observed the species in small numbers at Lake City, Walker Lake, Turrell, Arkansas City, Camden, Cotter, and Mammoth Spring. McAtee found small numbers at Big Lake, June, 1911. It probably breeds sparingly throughout the State wherever it can find suitable nesting sites.

Cedar Waxwing. *Bombycilla cedrorum.*

The cedar bird occurs as an irregular migrant and winter visitant and in the northern part as a rare breeder. It is reported as breeding at Clinton and was noted there also on November 10 and January 5 and 16. I saw a flock of 10 or 12 at Pettigrew on June 1, and the species probably breeds in that vicinity and in other parts of the Ozark region. A flock of 6, probably migrants, was noted at McGehee May 17. Savage noted it during every month in summer at Delight, but found no nests. At Helena the cedar bird is given by Mrs. Stephenson as an irregular visitant noted on numerous dates between February 4 and May 23 and in November. At Van Buren Hanna observed several small flocks in December and early January. The cedar bird feeds more extensively upon fruit and less upon insects than most small birds, and its fondness for cherries has gained for it the name of "cherry bird." However, examination of 152 stomachs by the Biological Survey showed only 9 containing cherries, while about three-fourths of the total food consisted of wild fruits or seeds. Insects constitute about 13 per cent of its food, and include such forms as cankerworms, grasshoppers, beetles, bugs, and scale insects. In winter great flocks of these birds are often seen feeding on hackberries or other wild fruit.

Northern Shrike. *Lanius borealis.*

The northern shrike, or "butcher bird," is a rare winter visitant, only two having been recorded—one seen at Fayetteville by Prof. Harvey and the other at Van Buren in December, 1910, by Mr. Hanna. Its habits are similar to those of its southern relative, the loggerhead shrike.

Migrant Shrike. *Lanius ludovicianus migrans.*

This shrike, known as "loggerhead" and "French mocking bird" in the South, is rather uncommon and of local distribution in summer in Arkansas. It is common in migration and occurs also in winter, probably more abundantly than in summer. It has been reported in the breeding season at Clinton, Newport, and Helena, and in migration at Fort Smith, Fayetteville, and West Point. At Delight specimens were taken August 8 and 22 and September 16 and 23. In winter it has been reported from Fayetteville, Stuttgart (common;

Hollister), and Van Buren (5 specimens, December 7–30; Hanna). I found it at only two localities, McGehee and Wilmot, in each of which it breeds in small numbers. Specimens taken at these places, as well as those from Delight and Van Buren, are referable to the subspecies *migrans*. The typical form seems not to occur in the State. The shrike is a decidedly useful bird, feeding in summer largely upon injurious insects, such as grasshoppers, crickets, caterpillars, cankerworms, and cutworms. It captures mice at all seasons, and in winter these rodents form about half of its food. At this season small birds are occasionally eaten. Shrikes frequently impale their prey upon thorns or barbed wire and apparently many more victims are impaled than are eaten.

Red-eyed Vireo. *Vireosylva olivacea.*

The familiar red-eyed vireo is one of the commonest and most evenly distributed of our woodland song birds, being found in all timbered regions both in the lowlands and on the mountains. Migrants arrive at Helena from the south about April 10 (earliest, March 30) and depart in autumn about the first of October (last, October 5). The species has been observed at Fayetteville, Clinton, Mammoth Spring, Lake City, Wilmot, Womble, Rich Mountain, Pettigrew, Conway, and other places. A nest with young was found at Eldorado July 4. By reason of its abundance and its well-known habit of searching every leaf on the trees for caterpillars and the like, this bird must be reckoned as one of our most valuable assistants in the work of conserving the forests.

[**Philadelphia Vireo.** *Vireosylva philadelphica.*

This vireo, which resembles the warbling vireo in appearance but sings much like the red-eyed, is a rare but regular migrant in the Mississippi Valley. In Missouri it occurs in May and in September and October and in Arkansas should be found during the same months.]

Warbling Vireo. *Vireosylva gilva.*

The warbling vireo has a peculiar distribution in the lower Mississippi Valley, occuring as a breeder, so far as known, only in the immediate vicinity of the Mississippi River. The only record of the species in Arkansas is from Helena, where it is reported by Mrs. Stephenson as a common summer resident, arriving from the south about March 30 and departing in early October (latest, October 5). The bird is a lover of tall trees and is often found in elms or other shade trees along country roads and village streets.

Yellow-throated Vireo. *Lanivireo flavifrons.*

This vireo is a common summer resident in all parts of the State. It lives in upland timber tracts in company with the red-eye and is partial also to small groves and to shade trees on village streets.

Migrants from the south reach Helena about the first week of April (earliest, March 24) and the return movement takes place during September and early October. The species was noted during the summer months at Mammoth Spring, Lake City, Conway, McGehee, Eldorado, Delight, Rich Mountain, and Pettigrew. Like the other vireos the yellowthroat is mainly insectivorous, and its food includes a variety of caterpillars, moths, beetles, etc., as well as house flies and mosquitoes.

Blue-headed Vireo. *Lanivireo solitarius.*

The solitary or blue-headed vireo occurs as a migrant in the Mississippi Valley, breeding from Minnesota northward. It should be found regularly in Arkansas in the latter half of April and again in September and October. The only record for the State, however, is furnished by Savage, who saw 2 birds at Delight on October 22.

White-eyed Vireo. *Vireo griseus.*

The white-eyed vireo is almost as common as the red-eye and, like it, is generally distributed. It occurs in both the mountains and the lowlands, and is especially abundant in wet river bottom timber where thickets and tangles of briers cover the ground. It arrives at Helena usually about the first of April (earliest, March 23) and remains until the middle of October (latest, October 16). It is reported as breeding at Clinton, Pea Ridge, Newport, Helena, Big Lake, and Delight. I observed it at Rich Mountain, Pettigrew, Conway, Mammoth Spring, and Turrell.

Bell Vireo. *Vireo belli.*

This is the rarest of the vireos and of very local distribution in Arkansas. It is most numerous in prairie regions and occurs also to some extent in rolling foothill country. I found this species rather common on the Grand Prairie about Stuttgart May 11–14, living in the copses and hedges and even in dooryards close to town. At Conway in June it was fairly common, and at Fort Smith several breeding pairs were located in a peach orchard near town. One was seen at Gurdon May 20.

Black-and-white Warbler. *Mniotilta varia.*

The black-and-white "creeper" occurs as a summer resident over the greater part of the State, but is rare or absent from the extreme southern part. It arrives at Helena from the south about the first of April (earliest, March 20) and remains until October. It has been reported as a breeder at Clinton, Newport, Hopefield, and Helena. I found it at Mammoth Spring, Turrell, Conway, Delight, Rich Mountain, and Pettigrew. At most of these localities it probably breeds,

but is nowhere common. This warbler is a typical woodland bird and is most at home in tracts of heavy timber, where it renders valuable service in the destruction of wood-boring insects, bark-beetles, and other injurious insects.

Prothonotary Warbler. *Protonotaria citrea.*

The prothonotary or golden swamp warbler is a common summer resident in the swamps and river bottoms of the southern and eastern part of the State. It arrives from the south about the first of April and departs in September. It is reported as breeding at Clinton, Newport, and Helena. I found it common at Wilmot and along the St. Francis River at Lake City. Several were seen at Camden in July, one on Cadron River near Conway June 6, and one on White River at Cotter June 8. It is numerous at Big Lake (McAtee, June, 1911). This brilliant little bird is a prominent and attractive feature of the big swamps, where it may often be seen flitting lightly over the water or prying into rotten stumps in search of insects, in securing which it shows almost as much dexterity as a flycatcher.

Swainson Warbler. *Helinaia swainsoni.*

This is another of the swamp-inhabiting warblers; but, unlike the prothonotary, is rare and very shy. It is an inhabitant of river-bottom timber, where it seeks concealment among the canebrakes and dense thickets of climbing vines, often remaining motionless for many minutes as it repeats at frequent intervals its rather loud and pleasing song. Although constantly on the alert for sight or sound of this bird, I detected it in only three localities. One was seen at Turrell May 8 and heard singing several times on succeeding days. Another was seen and heard singing in the Cadron River bottoms near Conway June 6, and several were noted at Camden July 4–7.

Worm-eating Warbler. *Helmitheros vermivorus.*

This warbler is a rare and local summer resident, occurring, as far as known, only in the mountains and foothills in the northern and western part of the State. It is reported as breeding in the hills west of Newport, and I saw two on Rich Mountain in Polk County May 25. The latter locality probably marks the southern limit of its breeding range. This bird bears a rather inappropriate name, since its food, as far as known, consists not of worms but of beetles, spiders, and ants.

Bachman Warbler. *Vermivora bachmani.*

This inconspicuous little warbler has a rather restricted range, having been found in the breeding season only on the coast of South Carolina and Georgia, in western Kentucky (near Russellville), and in the Sunken Lands of Arkansas and Missouri. The species was

described by Audubon in 1833 and was not found again in the United States for over 50 years, when it was discovered in Louisiana. Its occurrence in Arkansas was first made known by Mr. Otto Widmann, who discovered it on Boland Island, Greene County, in May, 1896, and the following year found the nest with eggs in Dunklin County, Missouri.[1] The bird is a moderately common breeder in the Sunken Lands of northeastern Arkansas. I saw one at Turrell April 28, 1910, and on May 10 collected two specimens at the same place in heavy timber with a dense undergrowth of cane. One was seen May 4 in the cypresses on Walker Lake. On the St. Francis River, 12 miles above Bertig, I found the birds rather numerous in 1909 (April 25–28) on the Missouri side of the river, and probably they are equally common on the Arkansas side.

Blue-winged Warbler. *Vermivora pinus.*

This warbler is a summer resident in the Mississippi Valley from Missouri northward, and probably occurs rarely at that season in extreme northern Arkansas. I observed one bird, probably a migrant, at Turrell on May 7 and a singing male in southern Missouri, near Mammoth Spring, Arkansas, June 13, which I believe was breeding in that vicinity. Mrs. Stephenson has observed the species once in migration at Helena May 13, 1894, and Mr. Savage noted three southbound migrants at Delight on August 20, 1910.

[Golden-winged Warbler. *Vermivora chrysoptera.*

This species occurs in the Mississippi Valley as a common migrant, breeding from central Minnesota northward. It may be looked for in Arkansas in late April and early May and again in September.]

Nashville Warbler. *Vermivora rubricapilla.*

The Nashville warbler is a common migrant in the Mississippi Valley in both spring and fall and breeds from Nebraska northward. The spring migration takes place chiefly between April 20 and May 10, and the return movement begins in August and continues through September and October. Savage noted two very early fall migrants at Delight August 20, and Preble collected a specimen and saw several more at Fort Smith September 19. Further investigation will doubtless show that the bird is a regular migrant in the State.

[Orange-crowned Warbler. *Vermivora celata.*

The orange-crown breeds in Canada and winters in the Gulf States and Mexico. It probably occurs regularly in migration in Arkansas and should be looked for in late April and May and in September and October.]

[1] Auk, XIII, p. 264, 1896; XIV, pp. 305–310, 1897.

Tennessee Warbler. *Vermivora peregrina.*

The Tennessee is one of the commonest of the wood warblers in migration, occurring in both spring and fall. Its summer home is in Canada and the northern United States. A single bird was noted at Delight as early as April 6 (Savage), but at Helena the species is usually observed between April 19 and May 12. I saw numbers of them at Lake City between April 30 and May 2 and at Walker Lake May 4 and 5. The fall migration takes place chiefly between September 15 and October 15.

Western Parula Warbler. *Compsothlypis americana ramalinæ.*

This tiny warbler is a very common summer resident in most parts of the State. It arrives in the vicinity of Helena about the first of April (earliest, March 24) and departs about the first of October. I observed the species in numbers at Mammoth Spring, Conway, Wilmot, Camden, Womble, Chester, Pettigrew, and Cotter, and it probably breeds in all those localities. Specimens were collected at Chester and Womble. There are no definite fall records. This species is an inhabitant of river-bottom timber and builds its nest usually in a bunch of hanging moss. Its food is said to consist largely of spiders, caterpillars, small flies, and beetles.

[**Cape May Warbler.** *Dendroica tigrina.*

This is one of the rarer warblers, but occurs quite regularly in migration in the Mississippi Valley on its way to and from its summer home in Canada. It may be looked for in Arkansas in late April or May and again in September.]

Yellow Warbler. *Dendroica æstiva.*

The yellow warbler occurs as a summer resident in the northern and northwestern parts of Arkansas, but apparently does not breed south of the Ozarks and their foothills. It is reported as a rare breeder at Clinton, but does not occur in summer at Helena. I found it in the breeding season at Pettigrew (common), Chester, Cotter, and Mammoth Spring. It appears in migration at Helena between April 14 and May 15. In the fall it leaves very early, passing south from the last of July to the middle of September. One was noted by Preble September 16, at Fort Smith. The yellow warbler is at times domestic in its habits, often taking up its abode in orchards and in trees or shrubbery surrounding farm and village houses. It is considered one of the most useful birds of the farm, feeding largely on caterpillars, cankerworms, barkbeetles, wood-boring beetles, and weevils (Forbush).

Black-throated Blue Warbler. *Dendroica cærulescens.*

This is a northern breeding species, occurring in the Mississippi Valley in migration during April, May, and September. There is only one record from Arkansas—a bird seen by Mrs. Stephenson at Helena, April 7, 1904.

Myrtle Warbler. *Dendroica coronata.*

The myrtle warbler is the hardiest of the warblers and the only one which winters in the Middle States. Its summer home is from the northern United States northward nearly to the Arctic Ocean. It occurs as an abundant migrant and winter resident, arriving from the north in October and departing in the spring in early May (latest date seen at Helena, May 12). It was abundant at Stuttgart in November (Hollister) and at Van Buren between November 25 and January 7 (Hanna). It has been observed in migration at Clinton, Lake City, and Delight. This bird owes its common name to its fondness for the berries of the wax myrtle (*Myrica cerifera*) and related species, which in some regions furnish its principal winter food. In the Mississippi Valley, however, it is said to feed extensively on berries of the poison ivy and to some extent on red cedar berries. It consumes also many insects.

Magnolia Warbler. *Dendroica magnolia.*

The magnolia or black-and-yellow warbler is a common migrant in Arkansas, passing north in May on the way to its summer home in Canada and returning in September and early October. It has been observed at Helena between May 1 and 19, at Lake City May 2, and at Turrell May 9. It is probably rare in the western part of the State, but three were seen by Mr. Savage at Delight on April 29, 1911.

Cerulean Warbler. *Dendroica cerulea.*

The cerulean warbler is a common summer resident in nearly all wooded parts of the State. Its distribution is apparently limited only by the occurrence of heavy deciduous woodland, for the bird is equally common in the river bottoms of the Mississippi and on the slopes of the mountains. Its favorite haunts are in the tops of the tallest trees, and except for its song its presence would rarely be detected. At Rich Mountain, May 23 to 28, it was singing almost constantly, and ranged nearly or quite to 2,500 feet altitude. In the Ozark hills about Pettigrew it was noted occasionally, but the timber there is not sufficiently dense to prove very attractive to this bird. I observed the species frequently in the Sunken Lands at Lake City and Walker Lake, and less commonly at Mammoth Spring, Conway, Wilmot, Camden, Womble, Chester, and Cotter. The average date of arrival of this bird at Helena is April 7 and the earliest record March 27.

Chestnut-sided Warbler. *Dendroica pensylvanica.*

This species breeds from Iron County, Mo., and Illinois northward and eastward, mainly in the Transition zone. It is a regular and not uncommon transient visitant, passing north in early May and

returning in September. It has been observed a few times by Mrs. Stephenson at Helena between May 1 and 16, and I saw 2 at McGehee May 17, 1910.

[**Bay-breasted Warbler.** *Dendroica castanea.*

The baybreast is a rather uncommon but regular migrant in the Mississippi Valley, and may be looked for in Arkansas in May and in September and October. It breeds in Canada and the Northern States.]

Black-poll Warbler. *Dendroica striata.*

The blackpoll, although one of the most abundant warblers in the northern and eastern States, is a rather uncommon migrant in the lower Mississippi Valley. This is explained by a study of its migration route, which shows that most individuals of the species enter the United States in spring by way of Florida and then pursue a course across the middle and eastern States to their summer home in the extreme northern United States, Canada, and Alaska. The bird has been observed only a few times in Arkansas—once by Mrs. Stephenson, at Helena, May 3, 1904, and twice by myself at Turrell, May 7, 1910, and at Rich Mountain, May 26 and 27—but it is doubtless rather more common than these few records would indicate. It is one of the very latest migrants in spring, passing north from May 1 to June 1. The southward movement is chiefly during September and October.

[**Blackburnian Warbler.** *Dendroica fusca.*

This handsome warbler is a moderately common migrant in the Mississippi Valley, and breeds from central Minnesota northward. It is found in Missouri from the last of April to the last of May and in September and October, and may be looked for in Arkansas at about the same dates.]

Sycamore Warbler. *Dendroica dominica albilora.*

This species is a rather uncommon summer resident, found chiefly in the swamps and river bottoms of the eastern part of the State, where it lives in the tall cypresses, sycamores, and other bottom-land trees. It has been noted at Helena between April 10 and 21, but doubtless arrives somewhat earlier than that, since it has been seen at Hornersville, Mo., on March 21 (Widmann). In fall it has been observed at Helena as late as October 10. Other records of its occurrence in the State are at Hardy, Lake City, and Walker Lake.

Black-throated Green Warbler. *Dendroica virens.*

This warbler occurs as a common transient visitant in spring and fall. It has been observed at Helena a number of times between April 8 and May 16. I noted it at Lake City May 1 and at Walker Lake May 4. Fall migration takes place in September and October. In its summer home in the Northern States and Canada this bird dwells mainly in pines, but in migration it may be found in both evergreen and deciduous timber.

Pine Warbler. *Dendroica vigorsi.*

The pine warbler, as its name implies, is an inhabitant of pine timber, and indeed is practically confined in the breeding season to regions in which considerable tracts of pine occur. Although partly migratory, the species occurs throughout the year in Arkansas. The more northern breeding birds move south in winter and occupy, in company with their southern breeding relatives, the pine forests of the Southern States. I found this warbler abundant in the breeding season near Delight, fairly common near Womble, and rather uncommon at Mena, Pettigrew, Eldorado, and Camden. It has been reported as breeding in the hills west of Newport. This is one of the few birds that lives exclusively in pine trees, and as it feeds to a large extent on the insects infesting those trees, it is considered a valuable species. Its food in winter includes, besides insects, a considerable amount of vegetable matter, such as dogwood and sumac berries and pine seeds.

[**Palm Warbler.** *Dendroica palmarum.*

The palm or red-poll warbler is a common transient visitant in the Mississippi Valley and breeds in Canada and northern Minnesota. It is one of the earliest warblers to migrate, passing north through Missouri from early April to the middle of May and returning during October. It should be found regularly in Arkansas.]

Prairie Warbler. *Dendroica discolor.*

This warbler is a fairly common summer resident, arriving from the south about the middle of April and remaining until the middle of September. Its name is rather inappropriate, since the bird is not found in prairie regions, but makes its home usually in brushy clearings among second-growth sprouts. It was noted at Helena between April 22 and 27, 1904, but apparently is not a regular breeder in the eastern part of the State. It is a common summer resident at Delight (where it arrived April 9, 1911), and I noted several at Mena and Rich Mountain. It breeds also in small numbers at Chester, Pettigrew, Conway, and Mammoth Spring.

Ovenbird. *Seiurus aurocapillus.*

The ovenbird, so named from the fancied resemblance of its domed nest to an old-fashioned oven, is one of the ground warblers and a dweller in deciduous woodland. It occurs commonly as a migrant, but as a breeder only in the mountains and foothills of the northern and western parts of the State. It is reported as a fairly common summer resident at Clinton, where it arrived from the south on April 24. I found it very common and breeding both on Rich Mountain and in the Ozark hills around Pettigrew. A migrant was observed at Turrell on May 9 and at Helena the species has been noted a few times between May 1 and 19.

A SUMMER RESIDENT INSECT-EATER. THE KENTUCKY WARBLER.

Grinnell Water-thrush. *Seiurus noveboracensis notabilis.*

This subspecies, the western form of the water-thrush, is a common migrant through the Mississippi Valley and breeds from northern Minnesota northward to Alaska. It is, of course, not a thrush at all, in spite of its name, but a ground warbler related to the ovenbird. It frequents swamps and creek and river bottoms. I noted several birds of the species at Turrell May 7, and this seems to be the only record from the State. The bird is probably of regular occurrence, however, and may be looked for between April 20 and May 15 and again from the last of August till October.

Louisiana Water-thrush. *Seiurus motacilla.*

The Louisiana or large-billed water-thrush is a southern breeding species, finding its northern limit in southern Nebraska and Minnesota. It is a fairly common summer resident in Arkansas, arriving from the south about the middle of March and departing in October. It frequents wooded ravines in the hills and, to some extent, wet river-bottom timber. It is reported as breeding at Clinton, Newport, and Helena. I found it rather common in summer at Mammoth Spring, and noted a few at Pettigrew, Chester, and Cotter. At Womble a nest just completed was found May 22, and at Camden I collected a full-plumaged young bird July 6.

Kentucky Warbler. *Oporornis formosus.*

This warbler is a common and generally distributed summer resident in the wooded parts of the State. It is a lover of damp, river-bottom woods, but is found also in ravines and along streams well up on the mountains. It is reported as a breeder at Clinton, Newport, Helena, and Delight. I found it at Pettigrew, Rich Mountain, Camden, Wilmot, and Turrell. The first migrants of this species were seen at Delight April 10, and at Helena April 13 (average date of arrival at Helena, April 20). In the fall it was last noted at Delight on September 4, but is seen only occasionally after the middle of August.

[**Connecticut Warbler.** *Oporornis agilis.*

The Connecticut warbler is a rather common migrant in spring in the Mississippi Valley, and breeds in Michigan, Minnesota, and Manitoba. Its fall migration is mainly east of the Alleghenies, and the bird is rare in the Mississippi Valley. It should occur regularly in Arkansas during the first half of May.]

Mourning Warbler. *Oporornis philadelphia.*

The mourning warbler, so named from the black hood it wears, is a regular and not uncommon migrant in the Mississippi Valley, breeding from central Minnesota northward. Its spring migration is performed during May and its fall migration in September. It has been observed but once in Arkansas—at Helena, May 2, 1909, by Mrs. Stephenson.

Maryland Yellowthroat. *Geothlypis trichas trichas.*

This little warbler is one of the commonest of our small birds and inhabits a variety of situations, including open swamps, marshy fields, brier patches, and brushy clearings. It is found all over the State—in timbered bottoms, on prairies, and in the valleys among the mountains. The average date of arrival in spring at Helena is April 11 and the earliest record April 4. In fall most of the birds pass south in late September or October. The species is recorded as a breeder at Clinton, Helena, Stuttgart, Wilmot, Camden, Mena, Chester, Pettigrew, Conway, Mammoth Spring, and other places. Specimens have been examined from Stuttgart, Wilmot, Mena, and Chester, and all prove referable to the typical form. At Turrell, May 7, I found a nest with 5 eggs on the slope of a railroad embankment within 10 feet of the track. The yellowthroat is a decidedly useful bird on the farm, feeding upon many injurious insects, such as leafhoppers, grasshoppers, cankerworms, and other caterpillars, beetles, moths, etc.

Yellow-breasted Chat. *Icteria virens.*

This bird, the largest member of the warbler family, is a common and generally distributed summer resident, occurring in suitable situations from the Mississippi bottoms to the tops of the highest mountains. The average date of arrival in spring at Helena is April 20 (earliest record, April 7). After the breeding season the birds quickly desert their summer homes, and by the middle of September practically all have left for the south. The last one seen at Delight was noted September 10. The species is recorded as a breeder at Mammoth Spring, Clinton, Newport, Helena, Stuttgart, Wilmot, Delight, Rich Mountain (base to summit), Pettigrew, Cotter, and other places. At McGehee, May 16, I found in a bunch of weeds a nest containing 3 eggs of the chat and one of the cowbird.

The chat is a lover of thickets and bushy pastures, where its curious whistling song may be heard at almost any hour of the day or night. Although usually shy, it occasionally launches into the air and, with legs dangling and wings raised high above the body, pours forth a medley of erratic notes. It is largely insectivorous, and has been known to feed on tent caterpillars, wasps, and beetles. In addition, it takes some vegetable food, as wild berries and seeds.

Hooded Warbler. *Wilsonia citrina.*

This brilliant little bird is a locally common summer resident, living in heavy bottom-land timber grown up to cane thickets, as well as in the drier brushy timber tracts on the mountain sides. I found it common on Rich Mountain nearly to the summit, and in a deep

wooded ravine on the south side discovered a nest with three young May 28. The bird was common also at Pettigrew in the Ozarks and at Turrell in the Sunken Lands. A few were noted at Camden in July. Mrs. Stephenson reports it as breeding at Helena, arriving usually about April 5 (earliest, March 31). It remains on its breeding grounds until September and passes south during that month.

Wilson Warbler. *Wilsonia pusilla.*

The Wilson black-cap warbler is a fairly common transient visitant in the Mississippi Valley and breeds from northern Minnesota northward. It is probably of regular occurrence in Arkansas, but has been observed only at Helena, where Mrs. Stephenson has noted it on various dates between April 30 and May 17.

Canada Warbler. *Wilsonia canadensis.*

This species nests in Canada and the cooler parts of the United States and occurs in the Mississippi Valley as a common transient visitant in spring and fall. It has been observed at Helena between May 2 and 15 (Stephenson) and at Delight between April 25 and 30 (Savage), these being the only records from the State.

Redstart. *Setophaga ruticilla.*

This brilliant little warbler is a fairly common summer resident. The male bird may be recognized by the orange bands on wings and tail and the female by corresponding bands of yellow. It is most numerous in the heavily timbered bottom lands of the eastern part of the State and is reported as a common breeder at Helena, where it arrives from the south usually about April 10 (earliest record, March 31) and departs in August and September (last seen, September 30). It is given as a breeder at Clinton by Pleas and at Big Lake by McAtee. I found it fairly common at McGehee and Camden and noted a few at Cotter on White River and at Wilmot.

The redstart is an extremely active bird and is an expert flycatcher. Its food consists, according to Forbush, of caterpillars, bugs, moths, gnats, flies, small grasshoppers, and beetles.

Pipit. *Anthus rubescens.*

The pipit, or "titlark," nests in the Arctic regions and on high mountains and winters from the Middle States southward. In winter it is found usually in large flocks, frequenting meadows and plowed fields. It resembles in general appearance a small, brown, streaked sparrow, but may be distinguished by its slender bill and the white outer tail feathers and by its habit of walking instead of hopping. The species is probably a not uncommon winter resident in Arkansas, but there are only a few records of its occurrence. I noted four

birds—belated migrants—at Lake City, April 29, and Hanna collected 5 specimens from a flock of 25 at Van Buren on December 24. The food of the pipit is largely insectivorous. It seems to be especially fond of weevils and has been found to be an important enemy of the boll weevil, large numbers of which it destroys in winter and spring. On the farm pipits often follow the plowman and pick up larvæ of ground beetles, weevils, and other insects.

Sprague Pipit. *Anthus spraguei.*

This is a western species, occurring regularly in migration as far east as eastern Nebraska and Oklahoma. There is one record from Arkansas published many years ago by Dr. Elliott Coues, who quotes from a letter received from Mr. Howard Ayers and dated Fort Smith, February 26, 1879, in which the writer states that this bird appears in that vicinity about November in small flocks and later in immense numbers, mingling with Lapland longspurs and remaining until February.[1] It seems highly probable, however, that this observer was in part mistaken, and that many, if not most, of the pipits seen were the common species (*Anthus rubescens*).

Mocking Bird. *Mimus polyglottos.*

The mocking bird, one of the best-known birds in the State, is a common and generally distributed permanent resident. It is essentially a bird of cultivated regions, and is rather uncommon in heavily timbered regions and in the higher mountains. None were seen on Rich Mountain, although they were numerous in the valley around Mena. At Pettigrew the bird was scarce and at Mammoth Spring rather uncommon, but at all other places visited, including Lake City, Conway, Stuttgart, Wilmot, Camden, and Womble, it was abundant. At Clinton it is reported as a rare breeder in the valleys. In winter it is reported common at Stuttgart (Hollister), and Van Buren (Hanna). This bird is sometimes destructive to grapes, figs, and other small fruits. On the other hand, it renders good service by destroying noxious insects, such as grasshoppers, crickets, caterpillars, beetles, cutworms, cotton worms, and boll weevils. Its food includes also various seeds and wild berries, including the seeds of dogwood, hackberry, red cedar, holly, and pokeberry.

Catbird. *Dumetella carolinensis.*

The catbird is a common summer resident over the greater part of the State. It was not observed on Rich Mountain, but at Pettigrew, in the Ozarks, it is fairly common. It is reported as breeding also at Pea Ridge, Clinton, Newport, and Helena. I found it numerous at Mammoth Spring, Turrell, Wilmot, Camden, and Delight. The

[1] Bull. Nutt. Orn. Club, IV, p. 238, 1879.

first migrants of this species arrive at Helena about the middle of April, and the last birds leave about the first week in October. The last one seen at Delight was noted October 10. A few winter in favorable localities in the State and McAtee noted them as fairly common in Crittenden and St. Francis Counties November 12–18, 1910. The Biological Survey's study of the catbird's food habits indicates that it subsists largely on fruit, of which about one-third is cultivated, the remainder of wild species, such as blackberries, wild cherries, mulberries, elderberries, and the fruit of the dogwood, sour gum, sumac, and poison ivy. Insects constituted about 44 per cent of the total food in the stomachs examined, and included ants, beetles, cater-

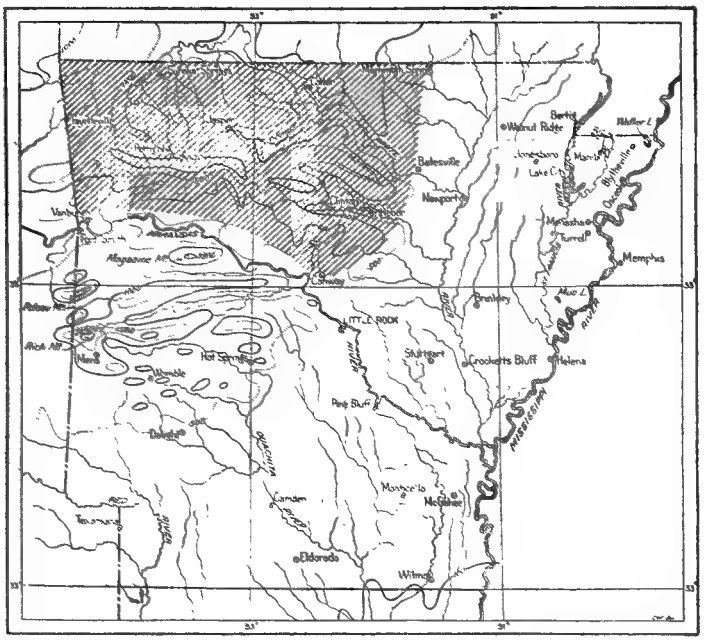

FIG. 4.—Breeding area of the brown thrasher (*Toxostoma rufum*) in Arkansas.

pillars, and grasshoppers. Though sometimes a pest where small fruits are raised, this bird on the whole does more good than harm.

Brown Thrasher. *Toxostoma rufum.*

This bird, frequently called the "brown thrush," is a common migrant and a rare summer resident in the northern part of the State. It is reported as nesting at Clinton and Newport, and I found it breeding in small numbers at Conway and Mammoth Spring. At the latter place a nest with young was found June 15. At Helena it does not breed but is reported as a rare migrant, arriving from the south about March 15 (earliest, March 1) and passing south in October and November (last seen, November 13). A few pass the

winter in the State, as at Delight, where they were observed in small numbers by Savage, and at Van Buren, where Hanna saw one bird January 5. Migrants from the north reached Delight September 27 and by October 15 the species was common there. The thrasher is a decidedly useful bird, more than half of its food consisting of injurious insects, such as beetles, grasshoppers, crickets, and caterpillars. In summer it eats some cultivated fruits, mainly raspberries, currants, and cherries, but the damage done is usually inconsiderable. In fall and winter it feeds largely on wild fruits, such as the berries of dogwood, sumac, and poison ivy.

Carolina Wren. *Thryothorus ludovicianus.*

The Carolina wren is one of the commonest birds in all parts of Arkansas. It adapts itself readily to civilized conditions and often places its nest about houses or farm buildings, and being nonmigratory its cheerful ringing song may be heard throughout the greater part of the year. It has been observed in abundance at Lake City, Helena, Wilmot, Camden, Rich Mountain, Van Buren, Pettigrew, Clinton, and Mammoth Spring. In a tract of heavy timber at Turrell, May 9, I started a large family of young ones from the ground. They were able to fly strongly and were chattering noisily in imitation of their parents. The Carolina wren is an eminently useful species. It seeks its food on or near the ground, exploring in great detail every nook and cranny in old logs, tree trunks, and brush piles, where it finds numbers of beetles, ants, spiders, weevils, and other insects. In such places it destroys many boll weevils during their season of hibernation.

Bewick Wren. *Thryomanes bewicki.*

This wren is much less common than the Carolina wren and is restricted mainly to the hill country in the northern and western parts of the State. It is even more domestic in its habits than the preceding and indeed is a characteristic "house wren," taking the place in Arkansas of the common house wren of the Eastern States. It is reported as a rare breeder at Clinton and Newport. I found it in small numbers at Mammoth Spring, Cotter, and Rich Mountain Station (1,600 feet altitude). It is fairly common at Conway and in the valleys about Pettigrew. In the lowlands this bird occurs only as a migrant, recorded from Helena in March and October, and from Lake City May 1 and 2. A few remain throughout the winter in the warmer parts of the State, as at Van Buren, where it was observed by Hanna on January 7. It does not breed at Delight, but appeared there on October 14 and 15 and remained until March 10.

House Wren. *Troglodytes aëdon parkmani.*

The common house wren of the Northern States occurs in Arkansas only as a migrant. It has been observed infrequently at Helena between April 17 and 29, and at Clinton between April 29 and May 7 and in early November. I saw one individual at Lake City April 29 and one at Turrell May 7. Savage noted a migrating bird at Delight October 2. There is but one winter record from the State, that of H. S. Reynolds, who observed the species at Judsonia.[1] Probably the eastern form (*aëdon*) of this species also occurs in the State, but no specimens are available.

Winter Wren. *Nannus hiemalis.*

This tiny short-tailed wren is a northern-breeding species and occurs only during migrations and in winter. It is a shy bird, spending its time during its winter sojourn mainly in and about brush piles and hollow logs in the woods. McAtee saw several at Turrell and Menasha in November and Hanna took five specimens at Van Buren in December. It has been observed also at Clinton in April, at Helena in May, and at Delight on October 29. Its stay in the State ordinarily extends from October to the middle of April.

Short-billed Marsh Wren. *Cistothorus stellaris.*

This species breeds in the Mississippi Valley from Missouri northward and winters mainly in the Southern States. It occurs as a migrant and possibly as a winter resident. There is but one record of its occurrence in the State—that of a bird which I observed May 17 in a broom sedge field near McGehee. This is an unusually late date, for the spring migration of this wren takes place usually in April or early May.

Prairie Marsh Wren. *Telmatodytes palustris iliacus.*

This is the Mississippi Valley form of the common long-billed marsh wren. It is a dweller in wet marshes along the borders of rivers and lakes, where its globular nests are fastened to the upright stalks of cattail flags over the water. In migration it is sometimes found in strange situations, as in the case of one which I caught in the railroad station at Blytheville about 11 p. m., May 5, or of another which I saw in a dry broom sedge field at McGehee, May 17. A single bird shot at Mena May 24 was probably a belated migrant. The species breeds locally in the State, having been observed in summer on the St. Francis River at Lake City and Bertig.

[1] Am. Nat., XI, p. 307, 1877.

Brown Creeper. *Certhia familiaris americana.*

The brown creeper is a common migrant in the Mississippi Valley and a winter resident in the southern part. Since it is known to breed regularly in the Sunken Lands of Southeastern Missouri (Widmann), it will probably be found breeding also in similar situations in northeastern Arkansas. The bird has been observed at Helena and Clinton in April and is reported also from Newport. Savage saw a few the first week of September at Delight and Hanna found the species common at Van Buren in December. It is a quiet, inconspicuous little bird, and seeks its food, mainly insects, on the trunks of trees, up which it creeps in long spirals.

White-breasted Nuthatch. *Sitta carolinensis.*

The white-breasted nuthatch is a generally distributed and not uncommon permanent resident. It is an inhabitant of wooded regions, and is perhaps most numerous in the mountains and foothills. It is reported as a breeder at Clinton, Fayetteville, and Newport. I found it in small numbers at Walker Lake, McGehee, Wilmot, Delight, Rich Mountain, Pettigrew, and Mammoth Spring. It is nonmigratory and has been observed in winter at Fayetteville, Judsonia, and Van Buren. At the latter place Hanna took specimens in November, December, and January. The food of this nuthatch in summer consists largely of cankerworms, forest tent caterpillars, plant lice, and other insects. In winter it takes a good many seeds and berries and some nuts.

Red-breasted Nuthatch. *Sitta canadensis.*

This species breeds mainly in the Northern States and Canada and winters over most of the United States. It probably occurs in Arkansas as an irregular migrant and winter visitant, but has been recorded only once—by Mrs. Stephenson, at Helena, October 3, 1895.

Brown-headed Nuthatch. *Sitta pusilla.*

This little nuthatch is a southern bird, common in the Gulf States and occurring locally as far north as Shannon County, Mo. It has been recorded in Arkansas only once—at Newport,[1] but it will doubtless be found sparingly in other places, particularly in pine-forested regions.

Tufted Titmouse. *Bæolophus bicolor.*

The tufted titmouse, or "tomtit," is common and generally distributed in the State, but less numerous in the mountains than in the heavily timbered river bottoms. It has been reported from Fayetteville, Pettigrew, Van Buren, Rich Mountain, Delight, Wilmot, Lake City, Mammoth Spring, Clinton, and Conway, and is a permanent resident wherever found.

[1] Cooke, W. W., Bull. 2, Div. Orn. and Mamm., U. S. Dept. Agric., p. 276, 1888.

In summer the tufted tit feeds largely on insects, as grasshoppers, beetles, cutworms, and caterpillars. In winter it consumes, in addition to insects, a considerable quantity of vegetable food, such as beechnuts, hazelnuts, acorns, chinquapins, and the berries of the dogwood, Virginia creeper, and other wild fruits.

Carolina Chickadee. *Penthestes carolinensis.*

The chickadee is a common bird in nearly all parts of the State, remaining throughout the year. It is much smaller than its relative, the tufted tit, with which it is often found associated, especially in winter. It has been reported from Fayetteville, Fort Smith, Clinton, and Helena. I found it common at Turrell, Wilmot, Womble, Rich Mountain, Cotter, and Mammoth Spring. Hanna collected 16 specimens at Van Buren in November and December. The chickadee is a dweller in both forest and orchard, and is everywhere a valuable aid to the farmer. It destroys large numbers of noxious insects, among them the tent caterpillar, various beetles, and the eggs, larvæ, and chrysalids of moths. About one-third of its food is of vegetable origin, and includes small seeds, the pulp of wild fruit, and wild berries.

Golden-crowned Kinglet. *Regulus satrapa.*

This tiny bird, but little larger than a humming bird, is a dweller in the Boreal zone in summer, but in winter is found over most of the eastern United States. Although recorded from only a few localities in Arkansas, it doubtless occurs generally as a migrant and winter resident. H. S. Reynolds records it as wintering at Judsonia,[1] and Hanna found it common at Van Buren in December. Mrs. Stephenson has observed the species a few times at Helena between March 7 and April 25, and Savage saw one bird at Delight on October 23.

Ruby-crowned Kinglet. *Regulus calendula.*

Like its cousin, the goldencrown, this kinglet is a northern breeding species and is found in Arkansas only in migration and in winter. It is common at that season in the Sunken Lands (Widmann), and Hanna found it common at Van Buren in December. It has been observed also at Clinton and Helena in January. The spring migration takes place in March and April, and at such times one often hears snatches of its clear sweet song from some thicket in the woods. The last migrants noted at Helena were seen April 29; at Delight it was observed between March 15 and April 25. In the fall the species invades the State during October, having arrived at Delight October 8 and become common there by the 20th of that month.

[1] Am. Nat., XI, p. 307, 1877.

Blue-gray Gnatcatcher. *Polioptila cærulea.*

The gnatcatcher is a common summer resident, particularly in timbered river bottoms and the big swamps of the Sunken Lands. It is reported as a breeder at Clinton, Newport, and Helena, and I found it plentiful at Lake City, Walker Lake, Turrell, Wilmot, Womble, and Mammoth Spring. None were observed on Rich Mountain and only one at Pettigrew. The first arrivals in spring reach Helena about March 15, and the last seen in fall were noted October 28. Nest building sometimes begins by March 30, and by May 1 or sooner the young are hatched. This bird apparently has no special predilection for gnats, as its name seems to suggest, but feeds upon a variety of small Hymenoptera, beetles, flies, caterpillars, and spiders.

Wood Thrush. *Hylocichla mustelina.*

The wood thrush is a common summer resident in all parts of the State. As its name indicates, it is a woodland dweller, preferring heavy deciduous forests on the mountains and in river bottoms. The species arrives at Helena from the south about April 10 (earliest record, April 4) and takes its departure in October. The last was seen at Delight October 8. It is reported as breeding at Clinton, Newport, and Helena. I found it numerous at McGehee, Camden, Womble, Rich Mountain, Pettigrew, Chester, and Mammoth Spring. Only a few were observed in the Sunken Lands, but McAtee found them numerous at Big Lake in June, 1911.

The food of this bird consists largely of insects, with a small percentage of fruit. The insects eaten include grasshoppers, crickets, cutworms, ants, caterpillars, and beetles, including the potato beetle. The fruit consumed is chiefly of wild varieties, such as frost grapes, wild blackberries, wild cherries, and the seeds of the spicebush and southern magnolia. Since the wood thrush is a decidedly useful species and adapts itself readily to civilized surroundings, its presence about the farm and garden should always be encouraged.

Willow Thrush. *Hylocichla fuscescens salicicola.*

The willow thrush, the western form of the veery, is a common migrant in the Mississippi Valley, breeding from Iowa northward. It is noted by Mrs. Stephenson nearly every spring at Helena between April 18 and May 19, the majority passing north during the first week of May and south during late September and early October. It has been observed also at Clinton and doubtless will be found generally throughout the State during migration. The food of this species is similar to that of the other thrushes, and includes a variety of insects and wild fruits.

Gray-cheeked Thrush. *Hylocichla alicix.*

This thrush is an abundant migrant in the Mississippi Valley on its way to and from its breeding grounds in Canada and Alaska. It is one of the latest migrants, reaching Arkansas the last week of April and lingering sometimes till late in May. It passes south in late September and October, Mrs. Stephenson having observed one at Helena as late as October 10. I noted the species in small numbers at Turrell (May 10), Stuttgart (May 13), Arkansas City (May 15), and McGehee (May 17). During its spring sojourn, this bird feeds chiefly on insects, but in the fall it prefers wild fruits and berries, such as sour gum, dogwood, poke berries, and frost grapes.

Olive-backed Thrush. *Hylocichla ustulata swainsoni.*

This is another of the northern breeding thrushes, occurring abundantly in migration in the United States. It resembles the graycheek closely in general appearance and is with difficulty distinguished from it in the field. It arrives in Arkansas usually by the middle of April, becoming common by the first of May and remaining till the 10th or 15th of that month. Mrs. Stephenson has observed it at Helena between April 30 and May 4, and Mr. Savage has noted it at Delight between April 15 and May 2. I found it common at Lake City and Turrell from April 29 to May 10. The southward movement takes place chiefly in late September and October, although occasionally a few birds linger till November, as in 1889, when the last were seen at Clinton November 15.

Hermit Thrush. *Hylocichla guttata pallasi.*

The hermit thrush is the hardiest of its family and often spends the winter in the United States as far north as Missouri. It nests in the Northern States and Canada, and is an abundant bird in Arkansas in migration, the majority passing northward in April and southward in October. It rarely sings while migrating, but on its breeding grounds it is famed for its beautiful song. The species has been recorded as occurring in winter in small numbers at Judsonia,[1] Stuttgart (Hollister), and Delight. Hanna took one specimen at Van Buren December 10. It is given as a migrant at Clinton and Helena.

In spring and summer the hermit thrush feeds mainly on insects, but in fall and winter it partakes largely of various wild fruits and berries, such as frost grapes, pokeberries, and the fruit of the dogwood, cedar, holly, and sumac.

[1] Reynolds, H. S., Am. Nat., XI, p. 307, 1877.

Robin. *Planesticus migratorius migratorius.*

The robin is an abundant migrant and a common winter resident but occurs in summer only in the northern part of the State and nowhere very commonly. It is reported as breeding rarely at Clinton and Newport, and I found it in small numbers at Pettigrew, Chester, Conway, and Mammoth Spring. It is reported also from Hot Springs, but must be very rare, as I saw none in the mountains west of there in Montgomery and Polk Counties. Mrs. Stephenson states that only once has a pair remained during the summer at Helena. Young birds were seen at Delight in July, probably stragglers from their nesting grounds farther north. In winter it occurs in roving flocks, having been reported from Stuttgart (Hollister), Fayetteville, Judsonia, Turrell, Clinton, Helena, and Van Buren (rare). Breeding specimens of the northern form have been examined from Mammoth Spring and one winter specimen from Van Buren. Nearly half the robin's food for the entire year consists of insects, mainly beetles, grasshoppers, and caterpillars. The remainder is made up chiefly of wild fruits, which are eaten extensively during the fall and winter months and to a less extent at other seasons. In early summer, robins take considerable cultivated fruit, particularly cherries, but the damage done is rarely sufficient to warrant the wholesale destruction of the birds. The wild fruits eaten include cherries, grapes, huckleberries, hackberries, persimmons, and the fruit of the sumac, dogwood, greenbrier, holly, and elder.

Southern Robin. *Planesticus migratorius achrusterus.*

The southern form of the robin is probably of accidental occurrence in Arkansas. The only record from the State is that of a single bird taken by Mr. G. Dallas Hanna at Van Buren, December 17, 1910.

Bluebird. *Sialia sialis.*

The familiar bluebird is abundant in both summer and winter. It nests in hollow trees or fence posts, but is domestic in its habits, and readily adopts for its use nest boxes placed on poles or about farm buildings. It is reported as breeding at Fayetteville, Clinton, Newport, and Helena. I found it common at practically every locality visited, including Lake City, Wilmot, Eldorado, Rich Mountain, Pettigrew, and Conway. In winter it is reported as abundant at Paragould,[1] Fayetteville, Helena, Judsonia (Reynolds), and Van Buren. A study of the food habits of this bird has shown it to be highly beneficial. Three-fouths of its food consists of insects, mainly beetles, grasshoppers, and caterpillars. Practically no cultivated fruit is eaten, but a great variety of seeds and wild berries, such as blackberries, cedar berries, and chokeberries, and seeds of the greenbrier, Virginia creeper, holly, mistletoe, and sumac.[2]

[1] Gault, B. T., Nidiologist, III, p. 84, 1896.
[2] Beal, F. E. L., Farmers' Bul. 54, U. S. Dept. Agric., pp. 46, 47, 1904.

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